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NEW YORK STATE DEPT OF ENVIRONMENTAL CONSERVATION ALBANY F/G 13/13
NATIONAL DAM SAFETY PROGRAM. BASIC CREEK DAM (INVENTORY NUMBER --ETC(U)
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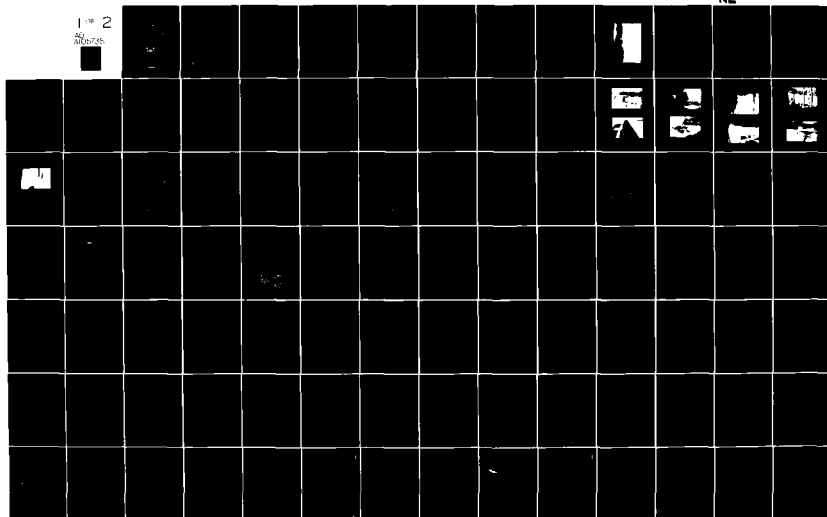
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1 OF 2

AD-A105 735



LEVEL II

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LOWER HUDSON RIVER BASIN

**BASIC CREEK
DAM**

**ALBANY COUNTY, NEW YORK
INVENTORY NO. N.Y. 84**

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OCT 18 1981**

AD A105735

**PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM.**

Basic Creek Dam (Inventory Number NY. 84),
Lower Hudson River Basin, Albany County,
New York. Phase I Inspection Report.



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DACW51-79-C-0001

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NEW YORK DISTRICT CORP OF ENGINEERS

11 FEBRUARY 1981

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. The examination of documents and visual inspection of Basic Creek Dam and appurtenant structures did not reveal conditions which constitute a hazard to human life or property. The discharge capacity of the spillway is inadequate for all storms in excess of 52% of the PMF (Probable Maximum		

Flood). During the 1/2 PMF event the water surface will approximate the top of dam elevation and the outflow will be 6801 cfs. The spillway is, therefore, assessed as "inadequate".

PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

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PHASE 1 INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
BASIC CREEK DAM I.D. No. NY 84
LOWER HUDSON RIVER BASIN
ALBANY COUNTY

TABLE OF CONTENTS

	<u>PAGE NO.</u>
- ASSESSMENT	
- OVERVIEW PHOTOGRAPH	
1 PROJECT INFORMATION	1
1.1 GENERAL	1
1.2 DESCRIPTION OF PROJECT	1
1.3 PERTINENT DATA	2
2 ENGINEERING DATA	3
2.1 GEOLOGY	3
2.2 SUBSURFACE INVESTIGATION	3
2.3 DAM AND APPURTENANT STRUCTURES	3
2.4 CONSTRUCTION RECORDS	3
2.5 OPERATION RECORD	4
2.6 EVALUATION OF DATA	4
3 VISUAL INSPECTION	5
3.1 FINDINGS	5
3.2 EVALUATION	6
4 OPERATION AND MAINTENANCE PROCEDURES	8
4.1 PROCEDURES	8
4.2 MAINTENANCE OF THE DAM	8
4.3 WARNING SYSTEM	8
4.4 EVALUATION	8
5 HYDROLOGIC/HYDRAULIC	9
5.1 DRAINAGE AREA CHARACTERISTICS	9
5.2 ANALYSIS CRITERIA	9

	<u>PAGE NO.</u>
5.3 SPILLWAY CAPACITY	9
5.4 RESERVOIR CAPACITY	9
5.5 FLOOD OF RECORD	9
5.6 OVERTOPPING POTENTIAL	9
5.7 EVALUATION	10
6 STRUCTURAL STABILITY	11
6.1 EVALUATION OF STRUCTURAL STABILITY	11
7 ASSESSMENT/RECOMMENDATIONS	12
7.1 ASSESSMENT	12
7.2 RECOMMENDATIONS	12

APPENDIX

- A. PHOTOGRAPHS
- B. VISUAL INSPECTION CHECKLIST
- C. HYDROLOGIC/HYDRAULIC ENGINEERING
- D. REFERENCES
- E. STABILITY ANALYSIS
- F. DRAWINGS

Phase I Inspection Report
National Dam Safety Program

Name of Dam: Basic Creek Dam (I.D. No. NY 84)
State Located: New York
County Located: Albany
Stream: Basic Creek (trib. of Catskill Ck & Lower Hudson River)
Date of inspection: October 24, 1980

ASSESSMENT

The examination of documents and visual inspection of Basic Creek Dam and appurtenant structures did not reveal conditions which constitute a hazard to human life or property. The discharge capacity of the spillway is inadequate for all storms in excess of 52% of the PMF (Probable Maximum Flood). During the 1/2 PMF event the water surface will approximate the top of dam elevation and the outflow will be 6801 cfs. The spillway is, therefore, assessed as "inadequate".

The following problem areas were observed which require remedial action within 1 year of notification to the owner:

1. Repair the areas of deteriorated concrete which are leaking (approx. 50 gpm) between the 24 inch and 48 inch valves within the intake chamber.
2. Repair the deteriorated concrete and control the seepage within the diversion tunnel.
3. Monitor the seepage within the intake chamber, particularly above the 12 inch valve, and repair as required.
4. Repair the voids in the concrete spillway apron. Repair the construction joint material of the spillway and apron. Reinspect at least yearly and recaulk as necessary.
5. Monitor the seepage from the horizontal joints of the spillway. If seepage increases appreciably, investigate and repair.
6. Periodically monitor the concrete deterioration of the dam and appurtenances. Repair as required.
7. Periodically remove the debris in the downstream channel. Also remove the tree and brush growth to provide an unrestricted channel.
8. Remove the trees and brush on the slopes, crest and abutments of the embankments. Provide a program of periodic cutting and mowing of these surfaces.

9. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including yearly operation and lubrication of all gates and valves. Document this information for future references. Also develop an emergency action plan for notification of downstream residents and the proper governmental authorities.

George Koch

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New York State Department
of Environmental Conservation
NY License No. 45937

Approved By:

W. M. Smith, Jr.
Col. W. M. Smith, Jr.
New York District Engineer

Date:

AUG 5 1981

Phase I Inspection Report
National Dam Safety Program
Basic Creek Dam I.D. No. NY 84
DEC #191-782 Lower Hudson River Basin
Albany County

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase I inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

Evaluation of the existing conditions of the subject dam to identify deficiencies and hazardous conditions, determine if they constitute hazards to human life and property and recommend measures where necessary.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam and Appurtenances

Basic Creek Dam consists of a 100 feet long concrete ogee spillway located near the left side of the dam, abutted by 2 homogenous earth embankments (left embankment = 134 feet, right embankment = 630 feet) with the maximum height of the dam above original ground surface being 21 feet. The upstream slopes of the embankment are 1 vertical: 3 horizontal, the downstream slopes are 1: 2.5, and the crest width is 15 feet. A berm was constructed at the toe of the downstream slopes at Elevation 930. The reservoir drain is located within the control building located at the right abutment of the spillway. An intake structure and diversion tunnel located northeast of the dam controls the flow to the Alcove Reservoir approximately 2 miles east of the dam.

b. Location

The dam is located on the Basic Creek, tributary to the Catskill Creek and the Lower Hudson River, within the Town of Westerlo, Albany County, New York.

c. Size

The dam is 21 feet high and impounds approximately 2200 acre-feet at spillway crest elevation. The dam is, therefore, classified as "intermediate" in size (1000 to 50,000 acre-feet).

d. Hazard Classification

The dam is classified as high hazard due to its location above the Village of South Westerlo.

e. Ownership

The dam is owned by the City of Albany, New York. The owner's representative is Mr. David F. Bruno, Commissioner, Department of Water and Water Supply, City of Albany, Quackenbush Square, Albany, NY 12207, telephone (518) 462-8661.

f. Purpose of the Dam

The dam impounds water for supply purposes to the City of Albany, NY.

g. Design and Construction History

The dam was constructed in 1928.

h. Normal Operating Procedures

Water Releases from Basic Creek Reservoir are normally passed over the spillway. When required, additional reservoir releases, through the intake structure and diversion tunnel, are provided to augment the storage capacity of Alcove Reservoir, which is located approximately 2 miles east of the dam.

1.3 PERTINENT DATA

a. Drainage Area (mi. 2)

19.46

b. Elevations (ft. USGS DATUM)

Top of Dam

947.0

Spillway Crest

925.0

Invert Reservoir Drain

908.0

c. Reservoir (Acres; Acre ft.)

Surface Area @ Top of Dam

320.

Surface Area @ Spillway Crest

265.

Storage @ Top of Dam

3922.

Storage @ Spillway Crest

2199.

d. Dam

Type: Homogenous earth with concrete core wall

Length: (ft.):

765.

Upstream Slope:

3:1

Downstream Slope:

2.5:1

Crest Width (ft.):

15.

e. Spillway

Type: Uncontrolled concrete ogee.

Weir Length (ft.)

99.

Capacity @ Top of Dam (cfs.)

6967.

f. Reservoir Drain

3 1/2 x 5 feet gated sluice way through concrete ogee section.

Maximum Capacity @ Top of Dam (cfs)

600 cfs.

SECTION 2: ENGINEERING DATA

2.1 GEOLOGY

The Basic Creek Reservoir Dam is located in the glaciated portion of the "Appalachian Uplands" physiographic province of New York State. This province (the Northern extreme of the Appalachina Plateau) was formed by the dissaction of the uplifted but flat lying sandstones and shales of the Lower and Middle Devonian Period (395 to 365 million years ago). The plateau surface is represented by flat-topped divides with drainage generally southward. Drainage in the vicinity of the dam is southward toward Catskill Creek.

Glacial cover is generally thin, the deposits of which have resulted from glaciations during the Wisconsin glaciation, approximately 11,000 years ago.

The "Preliminary Brittle Structures Map of New York" developed by Yngvar W. Isachsen and William G. McKendree (dated 1977), indicates the presence of the following Lineon features:

1. A topographic Linear feature observed on one or more of the following: topographic map, Landsat (ERTS), Skylab, or U-2 Photographic product. This feature extends from the south side of the reservoir southward and west of the dam.
2. A tonal linear feature observed on a landsat on U-2 photographic product. This feature extends northward from the north side of the reservoir.

2.2 SUBSURFACE INVESTIGATION

A subsurface investigation was conducted during the design of the structure which included 8 drillholes and 2 test pits. The locations and soil profiles these explorations are shown on Drawings Nos. 3 and 4 which are indicated in Appendix F.

In general this investigation indicates that the subsurface soils at the dam are of glacial origin and composed of sand gravel and clay with varying quantities of boulders, over bedrock.

2.3 DAM AND APPURTENANT STRUCTURES

The dam was designed by Whitman, Requardl and Smith and also by Robert E. Horton in 1928. This design consists of a concrete gravity spillway abutted by 2 earth embankments. The configuration of the spillway is ogee, and is founded on bedrock. The left embankment consists of homogenous earth and a concrete cut-off and core wall atop a steel sheet piling cut-off wall. The entire upstream slopes are ripraped.

2.4 CONSTRUCTION RECORDS

There are no construction records or photos available.

2.5 OPERATION RECORDS

The Basic Reservoir is used for storage and diversion to Alcove Reservoir, however, in the recent past, it has been seldom used. Records can be found in the monthly water report to the Water Commissioner.

2.6 EVALUATION OF DATA

The data presented in this report has been compiled from information obtained from Mr. David F. Bruno, Commissioner, and Mr. Roger Niles of the Department of Water and Water Supply. Some plans and previous inspection reports were on file at Dam Safety, Department of Environmental Conservation, 50 Wolf Road, Albany.

SECTION 3: VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspection of Basic Creek Dam and the Watershed was conducted on October 24, 1980. The weather was clear and the temperature ranged in the thirties. The reservoir level at the time of the inspection was approximately 4 feet below the spillway crest.

b. Embankment

The earth embankment showed no signs of distress. There was no evidence of sloughing, sliding, depressions, misalignment erosion or seepage. The slopes and crest of the embankments are heavily vegetated. The riprap of the upstream slopes is in good condition.

c. Spillway

The uncontrolled ogee spillway located near the left end of the dam appears to be in good condition for the age of the structure. Slight surface deterioration was observed on the downstream face of the spillway. The maximum depth of this deterioration was 2 inches. Concrete patching was also noted near the center of the downstream face. The construction joint material has deteriorated. Two separate horizontal joints were observed on the downstream face of the spillway. One on the left side about 8 feet above the toe, and the other on the right side about 1.5 feet above the toe. These joints may have resulted from delays during pouring of the concrete. Seepage was observed emanating from the joints at a rate of less than 1 gallon per minute (gpm). The spillway buttress walls are slightly deteriorated. A new concrete buttress cap has been constructed which should slow the rate of this deterioration. Deterioration was also observed in the vicinity of the reservoir drain outlet. No seepage was evident in the reservoir drain system.

d. Downstream Channel

The outflow channel consists of a concrete chute changing to ripraped slopes further downstream. Voids were observed in the apron between the foot bridge and the spillway and the construction joint material was deteriorated. Some debris was also noted in the channel. Additional channel wall weeps should be installed to prevent the buildup of hydrostatic pressures.

e. Intake Structure and Diversion Tunnel

The intake and diversion tunnel is located on the east side of the reservoir approximately 1500 feet north of the dam. While the exterior of the intake system appeared to be in good condition, examination of the interior and the walls of the tunnel revealed the following conditions:

1. Extensive concrete deterioration was observed between the 24 and 48 inch valves. Leakage in excess of 50 gpm was flowing through the concrete. This concrete had a honeycomb appearance.
2. Calcification and seepage was noted on the walls of the diversion tunnel. These problems appeared to be concentrated along the upstream end of the tunnel.
3. Seepage was observed on the extreme right side of the gate chamber approximately 8 feet above the 12 inch valve.

f. Reservoir Drains

The reservoir may be lowered by the 12, 24, or 48 inch gate valves contained within the intake structure on the east side of the reservoir, or by the 42 x 60 inch sluice gate located on the right side of the spillway. All valves and gates were reported to be operational and have been operated within the past year.

g. Reservoir

No sedimentation problems or instability was reported within the reservoir area. Albany County Route #404 bisects the reservoir. This relatively low lying highway has experienced flooding during the high flow conditions. During these periods the owners representatives operate the reservoir drains to reduce the flooding potential.

3.2 EVALUATION OF OBSERVATIONS

The problem areas observed during the inspection and the recommended remedial actions are as follows:

1. The deterioration of the concrete within the intake chamber has created leakage in excess of 50 gpm. This area must be repaired as soon as possible to prevent failure of the valve system.
2. Calcification and seepage within the diversion tunnel was observed near the intake chamber. This area must be investigated and repairs instituted as required to prevent further deterioration of the tunnel.
3. Seepage was noted on the right wall of the intake chamber above the 12 inch valve. This seepage should be monitored and repairs initiated if necessary.
4. Voids were observed in the spillway apron. These areas must be repaired to inhibit undermining of the apron.
5. The deteriorated construction joint material in the spillway and apron must be recaulked.

6. Two horizontal joints were observed in the spillway in which seepage was occurring. These areas must be monitored. If seepage is increasing investigate the condition of the joints and institute repairs.
7. Periodically monitor the concrete deterioration of the dam and appurtenances. Repair as required.
8. Periodically remove the debris within the downstream channel.
9. Remove the trees and brush on the slopes, crest and abutments of the abutments of the embankments. Provide a program of periodic cutting and mowing of these surfaces.
10. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including yearly operation and lubrication of all gates and valves. Document this information for future reference. Also develop an emergency action plan.

SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURES

The normal water surface elevation is approximated by the crest of the spillway. Basic Creek Reservoir is storage reservoir whose purpose is to augment the Alcove Reservoir, which is an Albany water supply. Augmentation of the Alcove reservoir can be accomplished by discharges through the 12, 24, or 48 inch gate valves located in the intake structure on the east side of the reservoir.

4.2 MAINTENANCE OF THE DAM

Maintenance of the dam is provided by the owner. This maintenance is not considered satisfactory due to the deterioration and seepage of the concrete of the intake chamber, diversion tunnel, spillway and apron, deterioration of construction joint material, debris in the downstream channel, and vegetation on the slopes of crests of the embankments.

4.3 WARNING SYSTEM

There is no warning system in effect or preparation.

4.4 EVALUATION

The dam and appurtenances have been maintained in unsatisfactory condition as noted in Section 3: Visual Inspection."

SECTION 5: HYDRAULIC/HYDROLOGIC

5.1 DRAINAGE AREA CHARACTERISTICS

The Basic Creek Reservoir is located on Basic Creek, tributary to Catskill Creek and the Lower Hudson River. The total area of the watershed at the Basic Creek Dam is 19.46 square miles. The terrain is of moderate slope and heavily wooded.

5.2 ANALYSIS CRITERIA

The analysis of the spillway capacity of the dam and storage of the reservoir was performed using the Corps of Engineers HEC-1 computer model. The unit hydrograph was defined by the Snyder Synthetic Unit Hydrograph method, and the Modified Puls routing procedure was incorporated. The Probable Maximum Precipitation (PMP) used was 19.5" (24 hrs. 200 sq. miles) from Hydrometeorological Report #33 in accordance with recommended guidelines of the Corps of Engineers. The floods selected for analysis were 20, 40, 50, 60, 80, and 100% of the Probable Maximum Flood (PMF) flows. The PMF inflow 15,362 cfs was routed through the reservoir resulting in an outflow of 15,244 cfs.

5.3 SPILLWAY CAPACITY

The spillway is a 99. feet long concrete ogee section approximately 18 feet high with a crest elevation of 940. (USGS). Height of flow to top of dam can be 7 feet before overtopping occurs. The maximum outflow of the spillway is 6967 cfs. The outflow channel is a reinforced concrete chute which takes a bend to the right directing flow into the original streambed. The channel is crossed by a foot bridge for access to the gate house located on the right spillway abutment.

5.4 RESERVOIR CAPACITY

The reservoir capacities at the crest of the spillway and the top of dam are 2199 and 3922 acre feet respectively. Surcharge storage between spillway crest and top of dam is equivalent to 1.66" of runoff from the watershed.

5.5 FLOODS OF RECORD

There are no gaging stations on Basic Creek nor are there any historic events of extreme levels recorded. An adjacent basin was examined, Station Id: 01361570, Tenmile Creek at Oak Hill had 11. years of data. This was used in two flood frequency analysis for comparative purposes. These results are shown in Appendix C. These analysis resulted in the use of a higher basin characteristic coefficient (ct) and infiltration rate (.2"hr) than normally used for New York State.

5.6 OVERTOPPING POTENTIAL

The maximum capacity of the spillway before overtopping occurs is 6967. c.f.s. which is 52% of the PMF. The dam is overtopped by 1.8 feet during the PMF event.

5.7 EVALUATION

The spillway of Basic Creek Reservoir will pass 52% of the PMF. By the Corps of Engineers Screening Criteria, it is considered inadequate.

SECTION 6: STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

No signs of major distress were observed in connection with the earth embankments or the spillway. There are a number of problem areas, discussed in "Section 3: Visual Inspection:", which if left uncorrected have the potential for the development of hazardous conditions.

b. Design and Construction Data

A structural stability analysis was conducted during the design of the dam by the engineers. This analysis is shown on Drawing No. 2 of 6 in Appendix f. The analysis assumes uplift pressures at the heel equal to 33% of the full head, and a horizontal top thrust of 5.9 kips per linear foot. The results of the analysis indicates that the resultant falls within the middle 1/3 of the base. The assumptions used during design are not appropriate by a current design standards. Therefore, the following analysis was conducted based on the Corps of Engineers Criteria.

<u>Case</u>	<u>Description of Loading Conditions</u>
1	Normal Operating Conditions, reservoir at El. 940 (spillway crest) full uplift, no tailwater.
2	Normal Operating Conditions with 7.5 k/h.f. ice load at El 938.
3	Water at 1/2 PMF level (El. 947) uplift as in case 1, weight of water on dam neglected, tailwater = 3.5 feet.
4	Water at PMF level (El. 949) uplift as in case 3, tailwater = 4.5 feet.
5	Normal Operating Conditions as in Case 1, with seismic forces of = 0.1.,

<u>Case</u>	<u>Factor of Safety Overturning</u>	<u>Location of Resultant from toe</u>	<u>Factor of Safety Sliding</u>
1	2.23	11.2	6.89
2	1.77	8.4	5.51
3	1.62	8.3	4.20
4	1.51	7.5	3.78
5	2.13	10.7	4.76

Location of middle 1/3 is 7.3 to 14.7 feet from the toe.

The results indicate that the spillway portion analyzed meets the recommended factors of safety for all loading conditions. Therefore, no further analysis is required at this time. Additional information concerning the structural stability analysis is included in Appendix E.

SECTION 7: ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

The Phase I Inspection of Basic Creek Dam did not reveal conditions which constitute an immediate hazard to human life or property. The embankments and spillway are not considered unstable. The dam, however, has a number of problem areas which require remedial action.

b. Adequacy of Information

The information reviewed is adequate for Phase I Inspection purposes.

c. Need for Additional Investigations

No additional investigations are required at this time.

d. Urgency

The areas requiring remedial action must be initiated within 3 months and completed within 1 year of notification to the owner.

7.2 RECOMMENDATIONS

1. Repair as soon as possible the areas of deteriorated concrete and and leaking between the 24 inch and 48 inch valves within the intake chamber. Delay of repairs may result in failure of this area.
2. Repair the deteriorated concrete and control the seepage within the diversion tunnel.
3. Monitor the seepage within the intake chamber, particularly above the 12 inch valve, and repair as required.
4. Repair the voids in the concrete spillway apron to inhibit undermining.
5. Repair the deteriorated construction joint material of the spillway apron. Reinspect at least yearly and recaulk as necessary.
6. Monitor the seepage from the two horizontal joints of the spillway. If seepage increases appreciably, investigate and institute repairs.
7. Periodically monitor the concrete deterioration of the dam and appurtenances. Repair as required.
8. Periodically remove the debris within the downstream channel.
9. Remove the trees and brush on the slopes, crest and abutments of the embankments. Provide a program of periodic cutting and mowing of these surfaces.
10. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including yearly operation and lubrication of all gates and valves. Document this information for future references. Also develop an emergency action plan for notification of downstream residents.

APPENDIX A
PHOTOGRAPHS



Photo #2
OGEE Section Spillway.
Note: Seepage and patching of concrete.

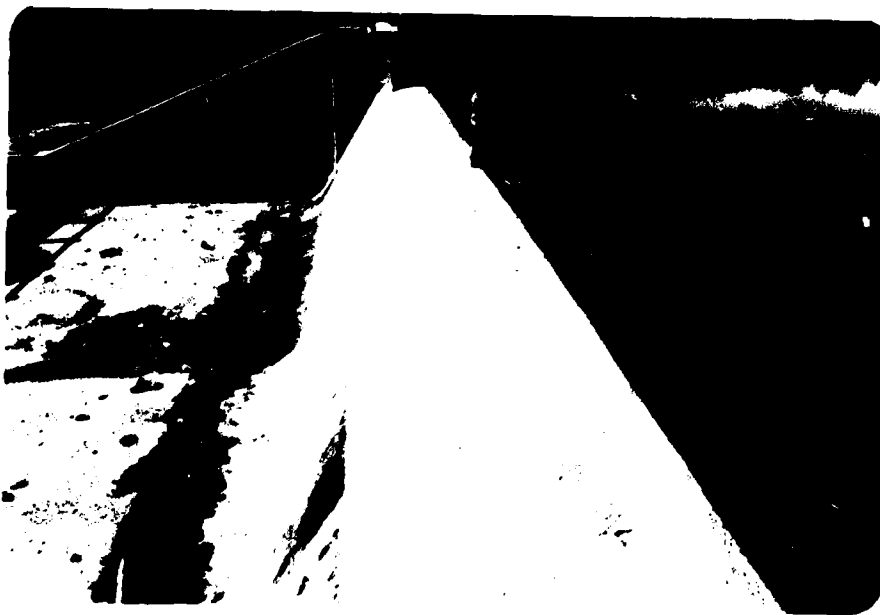


Photo # 3
Downstream side of spillway.
Note: Several holes in floor and seepage.



Photo # 4
Left spillway abutment.

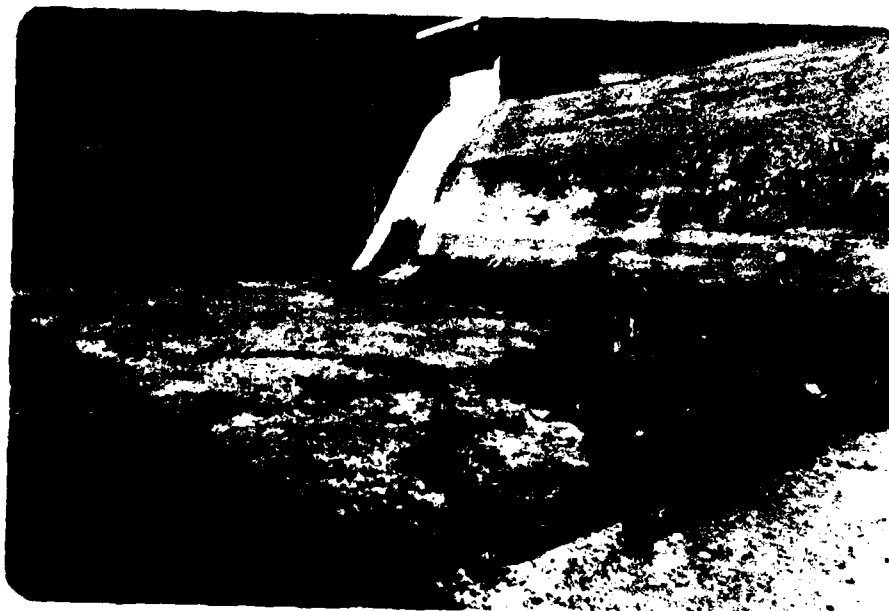


Photo # 5
Large void in channel floor.

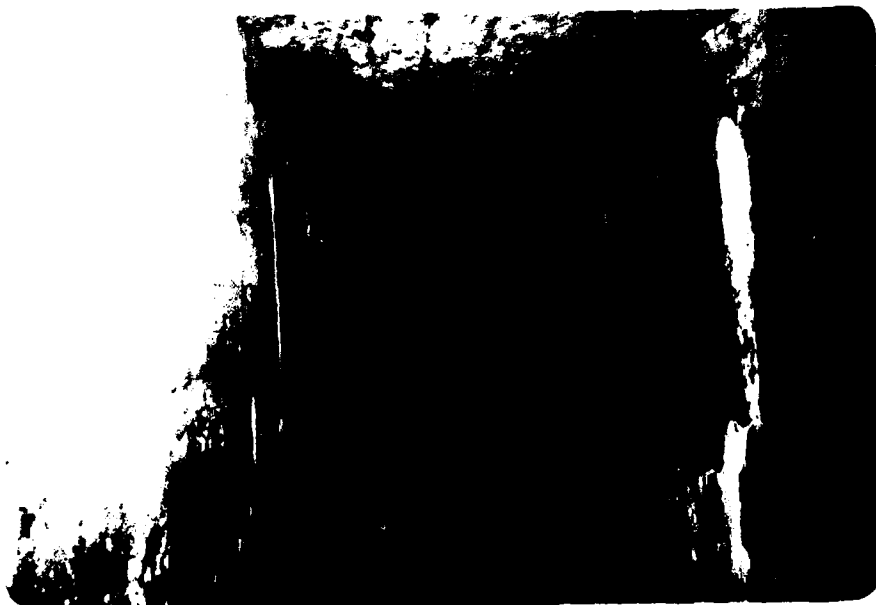


Photo # 6
Low level outlet through ogee section.
(3.5' x 5')



Photo #7
Spillway channel bending to the right towards original channel.



Photo # 8
Heavy tree and brush growth on downstream
side of right embankment.



Photo # 9
Intake of diversion to Alcove reservoir (east side).



Photo # 10
Leakage around lines into diversion intake.

APPENDIX B
VISUAL INSPECTION CHECKLIST

VISUAL INSPECTION CHECKLIST1) Basic Data

a. General

Name of Dam BASIC CREEK DAM
 Fed. I.D. # NY 84 DEC Dam No. 191-782
 River Basin Lower Hudson
 Location: Town Westerlo County Albany
 Stream Name BASIC Creek
 Tributary of Catskill
 Latitude (N) _____ Longitude (W) _____
 Type of Dam Homogeneous earth w/ concrete cutoff
 Hazard Category high
 Date(s) of Inspection Oct 29, 1980
 Weather Conditions clear, 50's
 Reservoir Level at Time of Inspection 4' below spillcrest

b. Inspection Personnel R. MCARTY J. Veitch R. Durrin, DEC.
R. Niles, Dept. of Water and Water Supply

c. Persons Contacted (Including Address & Phone No.) DAVID F. BRUNO,
Commissioner Dept. of Water and Water Supply, Albany,
NY 12207 (518) 8661.

d. History:

Date Constructed 1928. Date(s) Reconstructed _____

Designer ~~Robert H. Hutton~~, Whitman Requist & Smith

Constructed By _____

Owner City of Albany

2) Embankment

a. Characteristics

- (1) Embankment Material homogenous earth
- (2) Cutoff Type steel sheet pile
- (3) Impervious Core concrete core wall
- (4) Internal Drainage System none
- (5) Miscellaneous _____

b. Crest

- (1) Vertical Alignment good
- (2) Horizontal Alignment good
- (3) Surface Cracks None
- (4) Miscellaneous _____

c. Upstream Slope

- (1) Slope (Estimate) (V:H) 1:3
- (2) Undesirable Growth or Debris, Animal Burrows Some brush
- (3) Sloughing, Subsidence or Depressions none

(4) Slope Protection Stone - good condition

(5) Surface Cracks or Movement at Toe None apparent

d. Downstream Slope

(1) Slope (Estimate - V:H) 1:2 1/2

(2) Undesirable Growth or Debris, Animal Burrows heavy brush & tree growths, some burrows.

(3) Sloughing, Subsidence or Depressions none

(4) Surface Cracks or Movement at Toe none

(5) Seepage none

(6) External Drainage System (Ditches, Trenches; Blanket) None

(7) Condition Around Outlet Structure good

(8) Seepage Beyond Toe in spillway channel

e. Abutments - Embankment Contact

good.

93-15-3(9/80)

(1) Erosion at Contact None(2) Seepage Along Contact None3) Drainage Systema. Description of System Noneb. Condition of System —c. Discharge from Drainage System —4) Instrumentation (Monumentation/Surveys, Observation Wells, Weirs, Piezometers, Etc.) —

5) Reservoir

- a. Slopes shallow - stable
- b. Sedimentation Normal
- c. Unusual Conditions Which Affect Dam None

6) Area Downstream of Dam

- a. Downstream Hazard (No. of Homes, Highways, etc.) UNDER COUNTY ROAD & thru South Westside, water supply
- b. Seepage, Unusual Growth heavy growth of trees & brush
NO SIGNS of seepage.
- c. Evidence of Movement Beyond Toe of Dam None
- d. Condition of Downstream Channel good, some debris

7) Spillway(s) (Including Discharge Conveyance Channel)

- a. General generally good - requires maintenance
seepage under floor slab
- b. Condition of Service Spillway seepage through horizontal
construction joints, seepage carrying material
from under outlet channel floor slab
large cavities under slab

c. Condition of Auxiliary Spillway

None

d. Condition of Discharge Conveyance Channel

^{service}
debris, voids under
floor must be repaired.8) Reservoir Drain/OutletType: Pipe _____ Conduit _____ Other ☒Material: Concrete slurp thru Metal _____ Other _____
openSize: 42" x 60" Length 16 feetInvert Elevations: Entrance 923.0 Exit 922.5

Physical Condition (Describe): _____ Unobservable _____

Material: goodJoints: good Alignment _____Structural Integrity: goodHydraulic Capability: 600 cfs.Means of Control: Gate ☒ Valve _____ Uncontrolled _____Operation: Operable ☒ Inoperable _____ Other _____Present Condition (Describe): good

9) Structural

- a. Concrete Surfaces minor pitting
- b. Structural Cracking seeping through horizontal construction joints
- c. Movement - Horizontal & Vertical Alignment (Settlement) none
- d. Junctions with Abutments or Embankments good
- e. Drains - Foundation, Joint, Face good.
- f. Water Passages, Conduits, Sluices good shape
- g. Seepage or Leakage Through horizontal const. joints under floor slab.

- h. Joints - Construction, etc. _____
- i. Foundation good, needs maintenance further investigation under spillway floor slab.
- j. Abutments Appear good - resurfacing of joints reqd.
- k. Control Gates none
- l. Approach & Outlet Channels outlet channel in need of maintenance: debris, voids, joints.
- m. Energy Dissipators (Plunge Pool, etc.) ret. rock @ end of outlet channel
- n. Intake Structures poor shape taking badly around (EAST SIDE OF RES.) all intakes
to Alcove
- o. Stability good.
- p. Miscellaneous _____

10) Appurtenant Structures (Power House, Lock, Gatehouse, Other)

- a. Description and Condition gate house and surrounding
good, badly eroded under spillway slab, seepage
through horizontal construction joints.
Intake on east side of reservoir badly
in need of maintenance. Sealing around
all intakes.

11) Operation Procedures (Lake Level Regulation):

Not normally used or needed. Only regulation
normally needed is low level outlet through
spillway to lower reservoir level thereby
reducing flooding to the low lying
roadway across the reservoir.

APPENDIX C
HYDROLOGIC/HYDRAULIC
ENGINEERING DATA AND COMPUTATIONS

CHECK LIST FOR DAMS
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

1

AREA-CAPACITY DATA:

	<u>Elevation</u> (ft.)	<u>Surface Area</u> (acres)	<u>Storage Capacity</u> (acre-ft.)
1) Top of Dam	<u>947.</u>	<u>320.</u>	<u>3922.</u>
2) Design High Water (Max. Design Pool)	<u>-</u>	<u>-</u>	<u>-</u>
3) Auxiliary Spillway Crest	<u>-</u>	<u>-</u>	<u>-</u>
4) Pool Level with Flashboards	<u>-</u>	<u>-</u>	<u>-</u>
5) Service Spillway Crest	<u>940 940.</u>	<u>265.</u>	<u>2199</u>

DISCHARGES

	<u>Volume</u> (cfs)
1) Average Daily	<u>15.</u>
2) Spillway @ Maximum High Water	<u>6967.</u>
3) Spillway @ Design High Water	<u>-</u>
4) Spillway @ Auxiliary Spillway Crest Elevation	<u>-</u>
5) Low Level Outlet	<u>600.</u>
6) Total (of all facilities) @ Maximum High Water	<u>7567.</u>
7) Maximum Known Flood	<u>-</u>
8) At Time of Inspection	<u>0.</u>

CREST:

ELEVATION: 947.0Type: Homogeneous earth w/ concrete core wallWidth: 15 Length: 765Spillover none

Location _____

SPILLWAY:

SERVICE

AUXILIARY

940.

Elevation _____

uncontrolled ogee

Type _____

99.

Width _____

Type of Control

✓

Uncontrolled _____

Controlled:

Type

(Flashboards; gate)

—

Number _____

—

Size/Length _____

Invert Material _____

Anticipated Length
of operating service150' curving to right.

Chute Length _____

2:1 slopeHeight Between Spillway Crest
& Approach Channel Invert
(Weir Flow)

HYDROMETEROLOGICAL GAGES:

Type : None on Basin Creek. bot Tennile Cr. station in vicinityLocation:

Records:

Date - '69-78 annual peaks (Tennile Creek)Max. Reading - 5400 cfs.

FLOOD WATER CONTROL SYSTEM:

Warning System: None

Method of Controlled Releases (mechanisms):

low level outlet through spillway
24" line to Alcorn Reservoir

DRAINAGE AREA: 19.46 mi.²

DRAINAGE BASIN RUNOFF CHARACTERISTICS:

Land Use - Type: Rural - wooded and farmland
Terrain - Relief: ~~light~~ slight to moderate
Surface - Soil: much sand & gravel - glacial origin
Runoff Potential (existing or planned extensive alterations to existing
(surface or subsurface conditions)

none

Potential Sedimentation problem areas (natural or man-made; present or future)

none

Potential Backwater problem areas for levels at maximum storage capacity
including surcharge storage:

road way frequently flooded

Dikes - Floodwalls (overflow & non-overflow) - Low reaches along the
Reservoir perimeter:

Location: no

Elevation: _____

Reservoir:

Length @ Maximum Pool 1.10 (Miles)

Length of Shoreline (@ Spillway Crest) 3.5 (Miles)

BASIC RESERVOIR.

SPILLWAY EL. 940.

$L = 99'$

$R_{max} = 7'$

RESERVOIR SPLIT by low embankment - due to large CAPACITY, low embankment el. neglect.

DAM Length @ 947.0 = 750.'

SPILLWAY CAPACITY

EL.	C ^(100 year flood)	H	Q
940	-	-	-
942	3.4	2	952
944	3.6	4	2851
946	3.9	6	5529
947	3.9	7	6967
948	3.9	8	5512
950	3.8	10	11,396

RESERVOIR CAPACITY

EL.	CAPACITY GALS. $\times 10^6$	CAPACITY ACRE-FT.	EL.	CAPACITY GALS. $\times 10^6$	CAPACITY ACRE-FT.
923	0	0	32	188.2	577.6
924	21	6.4	33	235.7	
925	9.5		34	259.2	887.5
6	19.4	59.5	35	343.7	
927	35.1		36	413.4	1268.7
281	55.6	170.6	37	482.5	
29	80.7		38	556.0	1706.3
30	111.1	341.0	39	634.0	
31	146.7		40	716.4	2198.6

BASIC RESERVOIR

$$\text{Main channel } 20'' \frac{(24000)}{12(5230)} = 7.6 \text{ in}$$

$$S = \frac{1700 - 940}{40,000} = 0.019$$

EST CHANNEL

$$S = \frac{1700 - 115}{161500} = 0.015$$

$$L_{ca} = 11.5'' \frac{(24000)}{12(5230)} = 4.3 \text{ in}$$

$$t_p = C_t (L \times L_{ca})^{0.3} = 5.69 \text{ hrs.} \quad \text{assuming } C_t = 2.0$$

$$t_r = \frac{t_p}{1.5} = 1.035 \text{ hrs.}$$

$$T_p = t_p + 2.5 t_r = 6.2 \text{ hrs.}$$

$$C_p = 0.625$$

Assuming $C_t = 2.5$

$$t_p = 7.11$$

$$t_r = 1.3$$

$$T_p = 7.75$$

USE this

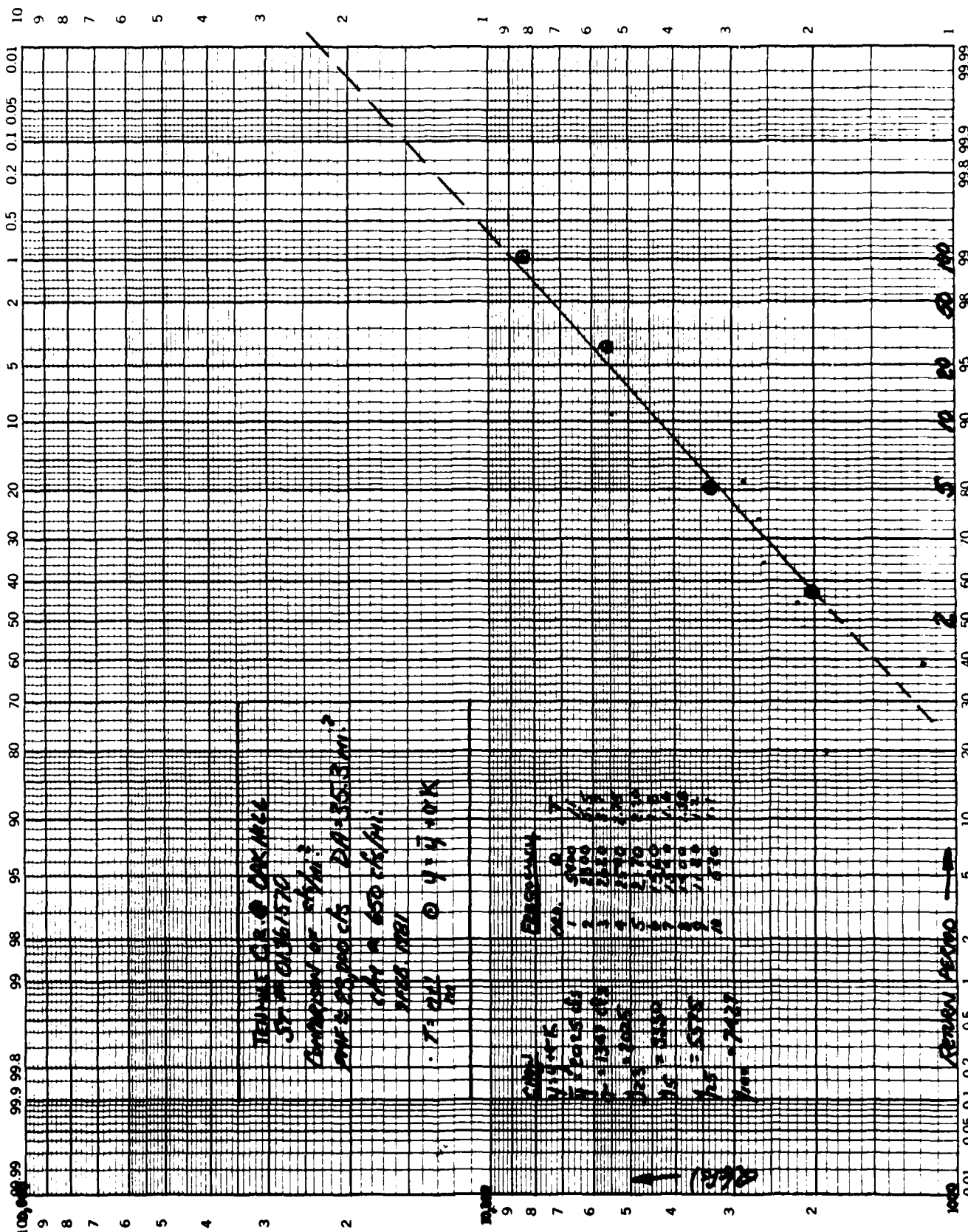
AS it corrects
w/ further analysis

Drainage Area 19.46 mi.²

$$S_{precip} = 19.5''$$

%	6	12	24	48
	103	115	126	134

$$1700 \text{ xw ft} - \frac{(x)}{12} (19.5)(370)$$



EXP. DATE 11/ 1/77

- J. S. GEOLOGICAL SURVEY
- LUG-WEA-M-SON TYPE III FLOOD FREQUENCY ANALYSIS
- FOLLOWING WATER RESOURCES COUNCIL GUIDELINES
-

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1  --- NOTICE ----- NOTICE ---
1  | PRELIMINARY COMPUTATIONS
1  | USER RESPONSIBLE FOR ASSESSMENT
1  | AND INTERPRETATION

```

AMT 31 JUL 67 0337Z
NYC 10 JUL 67 1114Z
NY

CASE NO 1

LOG-PEAKSUN TYPE III FREQUENCY CURVES
CORRESPONDING DISCRETE FREQUENCY CURVE IS 1.207E-05

DISCUSSION

EXCEEDANCE PROBABILITY	SYSTEMATIC RECORD	W+C ADJUSTED	EXPECTED PROBABILITY	95% CONFIDENCE LIMIT (10%-SIDED TEST)	UPPER
0.0020	253.4	551.8	551.8	243.6	790.3
0.0050	289.9	551.8	551.8	243.6	790.3
0.0100	326.4	551.8	551.8	243.6	790.3
0.0200	362.9	551.8	551.8	243.6	790.3
0.0500	432.4	551.8	551.8	243.6	790.3
0.1000	468.9	551.8	551.8	243.6	790.3
0.2000	505.4	551.8	551.8	243.6	790.3
0.5000	574.9	551.8	551.8	243.6	790.3
1.0000	609.4	551.8	551.8	243.6	790.3
2.0000	644.9	551.8	551.8	243.6	790.3
5.0000	714.4	551.8	551.8	243.6	790.3
10.0000	749.9	551.8	551.8	243.6	790.3
20.0000	785.4	551.8	551.8	243.6	790.3
50.0000	854.9	551.8	551.8	243.6	790.3
100.0000	890.4	551.8	551.8	243.6	790.3

1. *...the ... of ...*

JUN 1967 VLM 0.0

RUN DATE 11/ 1/77

.....
* J. S. GEOLOGICAL SURVEY
* LOG-PEARSON TYPE III FLOOD FREQUENCY ANALYSIS
* FOLLOWING WATER RESOURCES COUNCIL GUIDELINES
*

----- NOTICE -----
| PRELIMINARY COMPUTATIONS |
| USER RESPONSIBLE FOR ASSESSMENT |
AND INTERPRETATION

STATION ID: 01301370

NAME: TENNILLE CREEK AT DAK MILL NY

CASE N

LOG-PEARSON TYPE III CURVE FITTING

.....
***** WARNING - SYS REC PERIOD OR HIGH SYS PEAKS FALLS BELOW MMC SPEC *****

HIGH OUTLIER'S AND HISTORIC PEAKS TO BE TREATED AFTER TREATING LOW OUTLIER'S.

1 LOW OUTLIER'S BELOW MMC CRITERION OF 551.8 CFS. HAVE BEEN DROPPED.

HIGH OUTLIER'S AND HISTORIC PEAKS WERE NOTED.

CONDITIONAL PROBABILITY ADJUSTMENT WAS APPLIED TO MMC FREQUENCY CURVE.

ANNUAL FLOOD STATISTICS

MEAN	3.1757	ESTIMATES
STANDARD DEVIATION	0.2133	4.2112 S
SKEW COEFFICIENT	-1.1512	0.1358 S
STATION	--	0.2095
GENERALIZED	--	0.4200 *
KRC WEIGHTED	0.0	551.8
FLOOD BASE (CFS)	1.0000	10
PROBABLE BASE	9	10
NUMBER OF PEAKS	9	10
PERIOD (YEARS)	9	10

S - SYNTHETIC
* ADOPTED FOR FINAL COMPUTATIONS

STATION 01361570 TENMILE CREEK AT HILL, N.Y.

TOTAL D.A. = 35.3 CONTR. D.A. =
GAGE DATUM = 588.19 FT.

WATER YEAR	ANNUAL PEAK DISCH. CFS	DATE	CODES	HIGHEST SINCE	GAGE HEIGHT OF ANNUAL PEAK, FT	CODE	ANNUAL MAX GAGE HT. FT	DATE	CODE
1960	2800	09-12-60	HP						
1969	1120	04-23-69			5.24				
1970	1400	04-02-70			5.55				
1971	520	04-03-71			4.42	NM	4.97	07-13-71	8W
1972	1560	06-22-72			5.71				
1973	2540	06-30-73			6.43				
1974	2620	07-03-74			6.48				
1975	1540	04-03-75			5.69				
1976	1380	6-16-75			5.53				
1977	2170	3-14-77			6.19				
1978	5400	11-8-77			7.98				

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DATA SPECIFICATION		UNIT	MEASUREMENT
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2	0	0	0
3	0	0	0
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96	0	0	0
97	0	0	0
98	0	0	0
99	0	0	0
100	0	0	0

Time	0.40	0.50	0.60	1.00
PLA = 1	0.40	0.50	0.60	1.00

新華書店北京發行所

UT	INAME	ISTAGE	IAUTO
C	I	3	0

EXPERIMENTAL DATA	RATIO
IRSO1	TRSPC
19-65	19-65

Rate	Days	Rate	Days	Rate
12.24	30	12.24	30	12.24
12.00	30	12.00	30	12.00

6-28

MISS DATA
STICK
STICK

7.75 CP=0.63 NTA= C

```

      RTQ= -2.0    PCSK= -0.96   RTICR= 1.00
      NAME SYNO CP AND TP ARE TC=13.57 ALC R=24.8C

```

FLURS, CP = C.63	WOL = C.94
152.	235.
692.	736.
1028.	1041.
912.	1182.
646.	603.
457.	441.
323.	312.
228.	213.
161.	156.
	151.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000
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PLAIN, PATL a

10-10-61 F-100 GRAPH CRINATES

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
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259.	2249.
260.	2250.
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UNITED STATES DEPARTMENT OF AGRICULTURE

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DATA INDICATES THAT THE RANGE OF TEMPERATURES IN STRONG ELEVATION DATA

STOCKS AND BONDS

SECRET

... HAITI, THE FRENCH CARIBBEAN

“YFL”

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STIFF AGE

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Page 15

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	72-HPLP	24-HPLP	72-HPLP	TOTAL VOLUME
30113.	1908.	3916.	30113.	30113.
10752.	54.	112.	10752.	10752.
7.59	7.59	7.53	7.59	7.59
192.80	191.24	193.57	192.80	192.80
7874.	7810.	7810.	7874.	7874.
9712.	9634.	9634.	9712.	9712.

STATIONARY (C) OBSERVED FLD (C)

200	120	14000	16000	C	C	C	C	0
0.15	41							
0.30	21							
0.45	21							
1.00	41							
1.15	51							
1.30	71							
1.45	71							
2.00	1							
2.15	51							
2.30	101							
2.45	111							
3.00	121							
3.15	131							
3.30	141							
3.45	151							
4.00	161							
4.15	171							
4.30	181							
4.45	191							
5.00	201							
5.15	211							
5.30	221							
5.45	231							
6.00	241							
6.15	251							
6.30	261							
6.45	271							
7.00	281							
7.15	291							
7.30	301							
7.45	311							
8.00	321							
8.15	331							
8.30	341							
8.45	351							
9.00	361							
9.15	371							
9.30	381							
9.45	391							
10.00	401							
10.15	411							
10.30	421							
10.45	431							
11.00	441							
11.15	451							
11.30	461							
11.45	471							
12.00	481							
12.15	491							
12.30	501							
12.45	511							
13.00	521							
13.15	531							
13.30	541							
13.45	551							
14.00	561							
14.15	571							
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21.15 01
21.30 01
21.45 01
22.00 01
22.15 01
22.30 01
22.45 01
23.00 01
23.15 01
23.30 01
23.45 01
0. 01
0.15 01
0.30 01
0.45 01
1.00 01
1.15 01
1.30 01
1.45 01
2.00 01
2.15 01
2.30 01
2.45 01
3.00 01
3.15 01
3.30 01
3.45 01
4.00 01
4.15 01
4.30 01
4.45 01
5.00 01
5.15 01
5.30 01
5.45 01
6.00 01
6.15 01
6.30 01
6.45 01
7.00 01

0.15150	1.0
0.30150	1.0
0.45150	1.0
1.05150	1.0
1.15150	1.0
1.25150	1.0
1.35150	1.0
1.45150	1.0
1.55150	1.0
2.00000	1.0

..... 100

—

10

SPILL: AY CREST
547.00
2159.
C.

TEL 4 00N
547.00
3922.
1967.

[illegible]

APPENDIX D

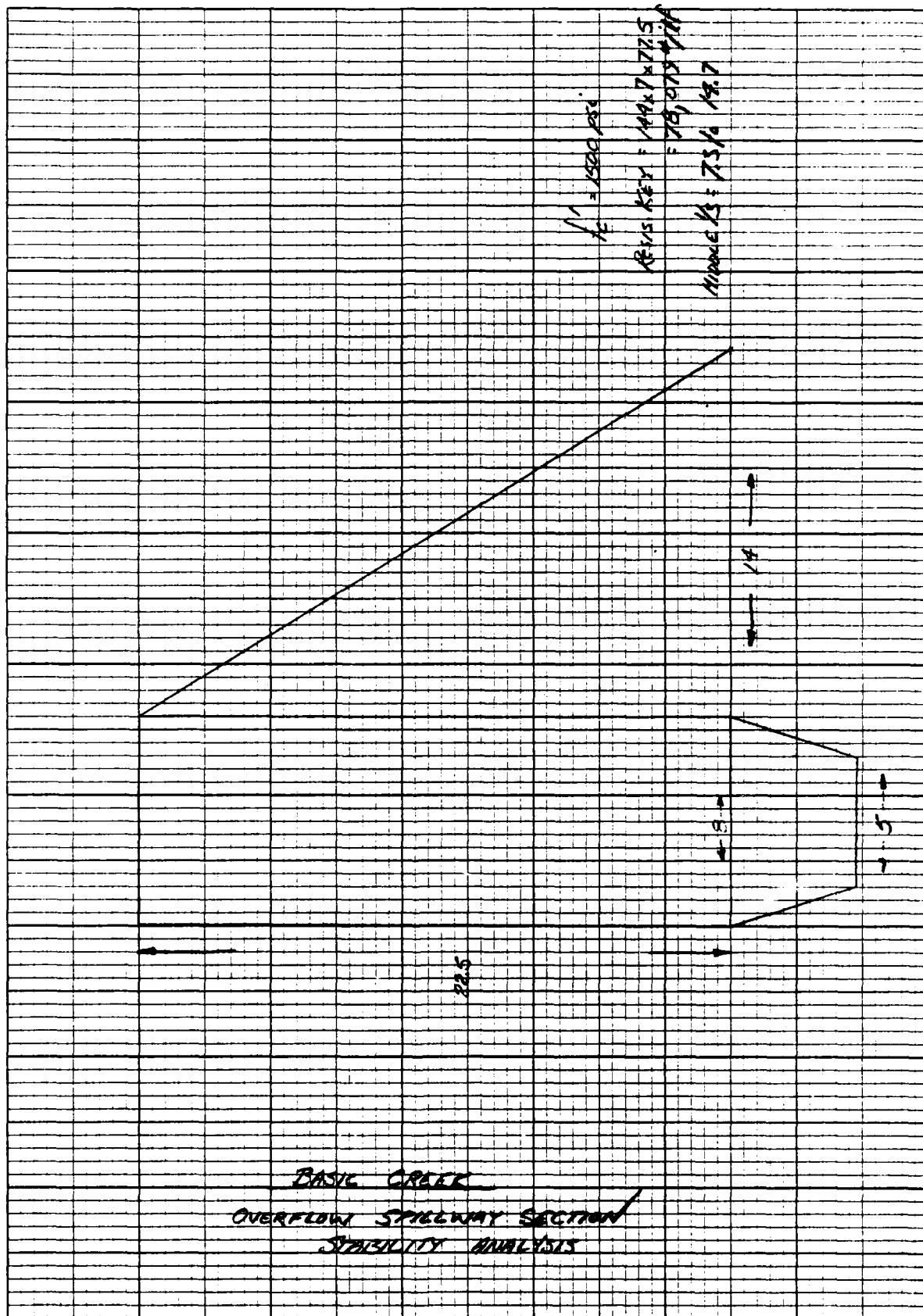
REFERENCES

APPENDIX D

REFERENCES

- 1) U.S. Department of Commerce, Technical Paper No. 40, Rainfall Frequency Atlas of the United States, May 1961,
- 2) U.S. Department of Commerce, Hydrometeorological Report No. 33, Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas from 10 to 1,000 Square Miles and Durations of 6, 12, 24, and 48 Hours; April 1956.
- 3) Soil Conservation Service, National Engineering Handbook, Section 4, Hydrology, August 1972 (U.S. Department of Agriculture),
- 4) H.W. King and E.F. Brater, Handbook of Hydraulics, 5th edition, McGraw-Hill, 1963.
- 5) T.W. Lambe and R.V. Whitman, Soil Mechanics, John Wiley and Sons, 1965.
- 6) W.D. Thornbury, Principles of Geomorphology, John Wiley and Sons, 1969.
- 7) University of the State of New York, Geology of New York, Education Leaflet 20, Reprinted 1973.
- 8) Cornell University Agriculture Experiment Station (compiled by M.G. Cline and R.L. Marshall), General Soil Map of New York State and Soils of New York Landscapes, Information Bulletin 119, 1977,

APPENDIX E
STABILITY ANALYSIS



BASIC CREEK
OVERFLOW SPILLWAY SECTION
STABILITY ANALYSIS

STABILITY ANALYSIS PROGRAM - WORK SHEET

<u>INPUT ENTRY</u>		<u>ANALYSIS CONDITION</u>				
		1	2	3	4	5
Unit Weight of Dam (K/ft ³)	0	0.145				
Area of Segment No. 1 (ft ²)	1	157.5				
Distance from Center of Gravity of Segment No. 1 to Downstream Toe (ft)	2	9.333				
Area of Segment No. 2 (ft ²)	3	180.				
Distance from Center of Gravity of Segment No. 2 to Downstream Toe (ft)	4	18.				
Area of Segment No. 3 (ft ²)	5	30				
Distance from Center of Gravity of Segment No. 3 to Downstream Toe (ft)	6	18.				
Base Width of Dam (Total) (ft)	7	22.				
Height of Dam (ft)	8	22.5				
Ice Loading (K/L ft.)	9		7.5			
Coefficient of Sliding	10	0.7				
Unit Weight of Soil (K/ft ³) (deduct 18)	11	.145				
Active Soil Coefficient - Ka	12	0				
Passive Soil Coefficient - Kp	13	3.0				
Height of Water over Top of Dam or Spillway (ft)	14	0	7	9		
Height of Soil for Active Pressure (ft)	15	0				
Height of Soil for Passive Pressure (ft)	16	4.5				
Height of Water in Tailrace Channel (ft)	17	0	3.5	4.5		
Weight of Water (K/ft ³)	18					
Area of Segment No. 4 (ft ²)	19					
Distance from Center of Gravity of Segment No. 4 to Downstream Toe (ft)	20					
Height of Ice Load or Active Water (ft) (does not include 14)	46	22.5	20	22.5	22.5	22.5
Seismic Coefficient (g)	50	0.0	0.0	0.0	0.0	0.1
RESISTANCE OF KEY <i>K₁</i>	58	78				
<u>RESULTS OF ANALYSIS</u>						
Factor of Safety vs. Overturning		2.23	1.77	1.62	1.51	2.13
Distance From Toe to Resultant		11.2	8.4	8.3	7.5	10.7
Factor of Safety vs. Sliding		6.89	5.51	4.20	3.78	4.76

BASIC CREEK DAM
STABILITY ANALYSIS
SPILLWAY SECTION

Case I Normal Loading

- (a) 2.225835692
- (b) 11.17449641
- (c) 6.894259152

Case II Ice Loading

- (a) 1.767039126
- (b) 8.425600601
- (c) 5.510311562

Case III 1/2 PMF

- (a) 1.623778772
- (b) 8.327770721
- (c) 4.199170472

Case IV PMF

- (a) 1.508107821
- (b) 7.452907129
- (c) 3.776316672

Case V Seismic Loading

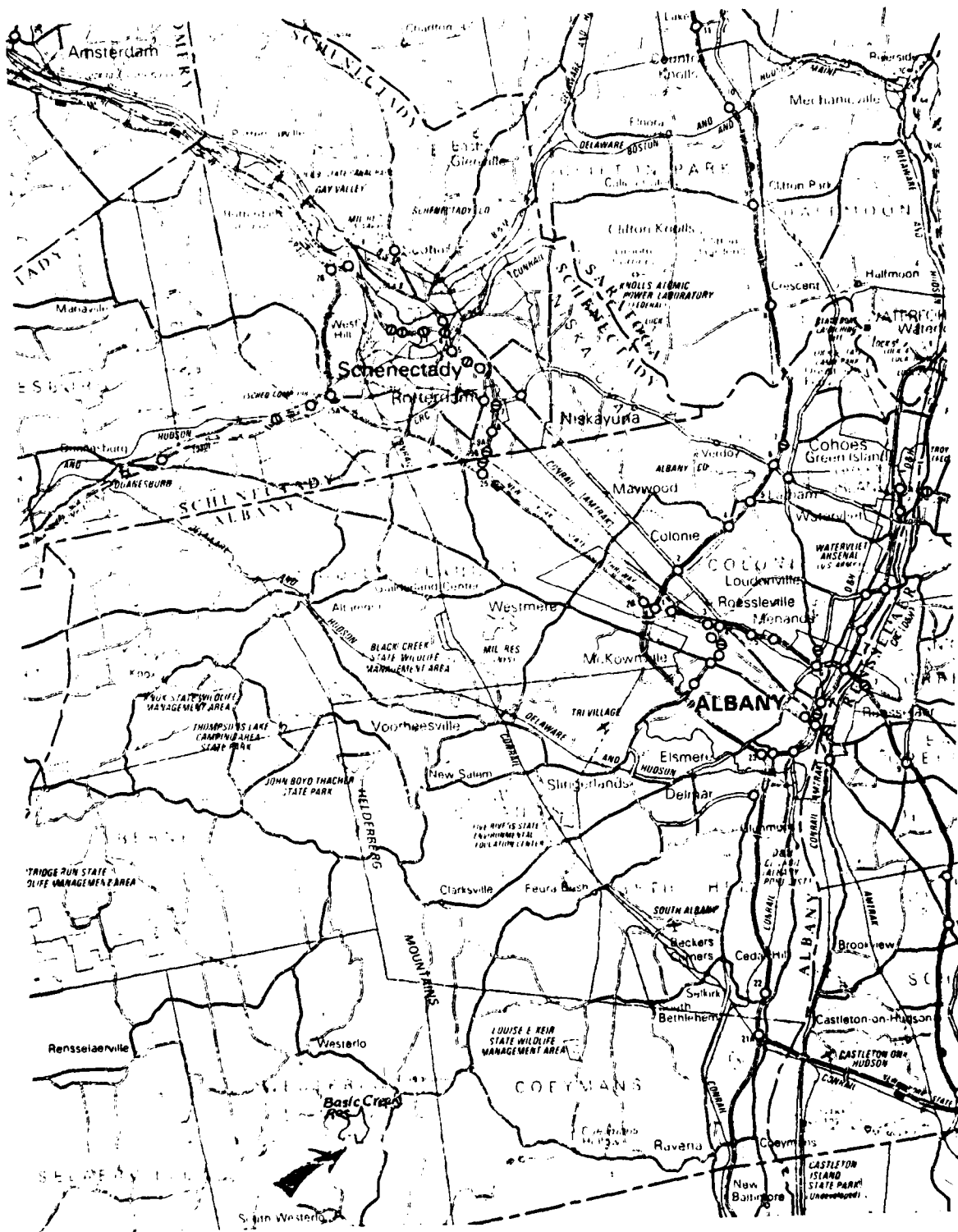
- (a) 2.125425041
- (b) 10.74384121
- (c) 4.76035143

NOTE: (a) is the factor of safety for overturning;
(b) is the location of the resultant from the toe;
(c) is the factor of safety for sliding.

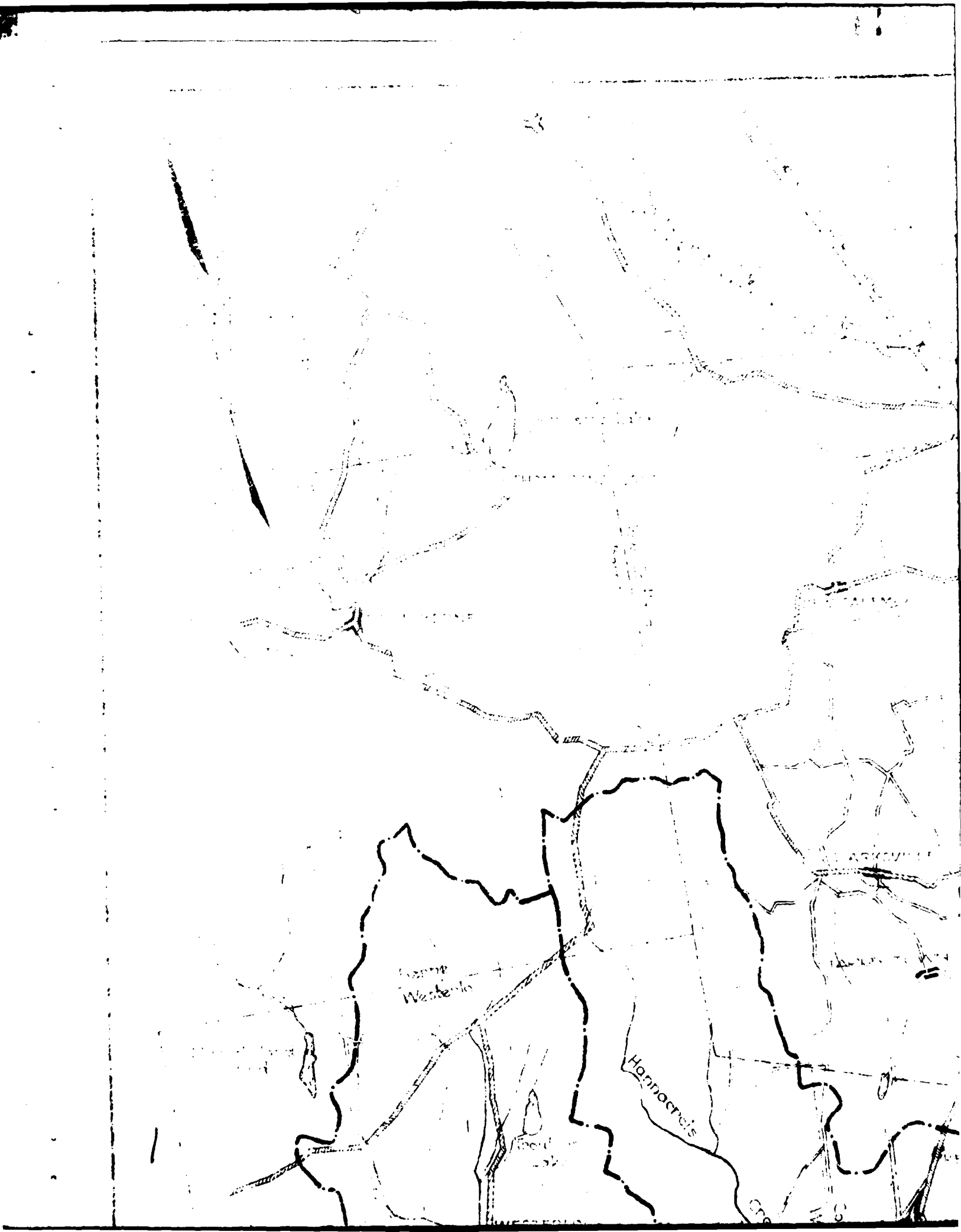
APPENDIX F
DRAWINGS

Topographic map of the Basic Creek Reservoir area in West Virginia. The map shows the reservoir, Basic Creek, and surrounding terrain with contour lines. Key features include the 'S T E R L O' section, 'Westerlo Central Cem', 'School No 6', and 'Basic Creek Reservoir'. The map is oriented with North at the top.

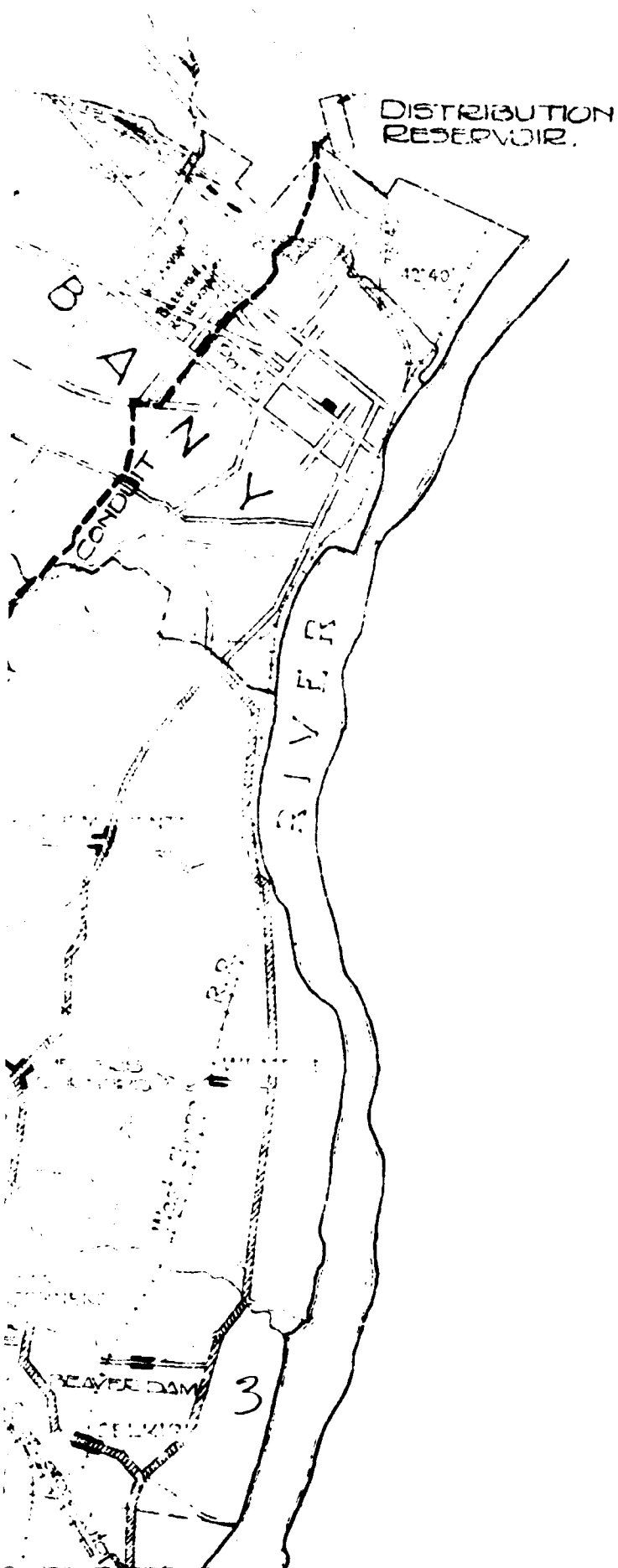
TOPOGRAPHIC MAP



VICINITY MAP







CITY OF ALBANY BOARD OF WATER

NEW YORK
EDWARD E. B.
JANUARY 1900

WHITMAN, REQUARDT AND SMITH.
Engineers

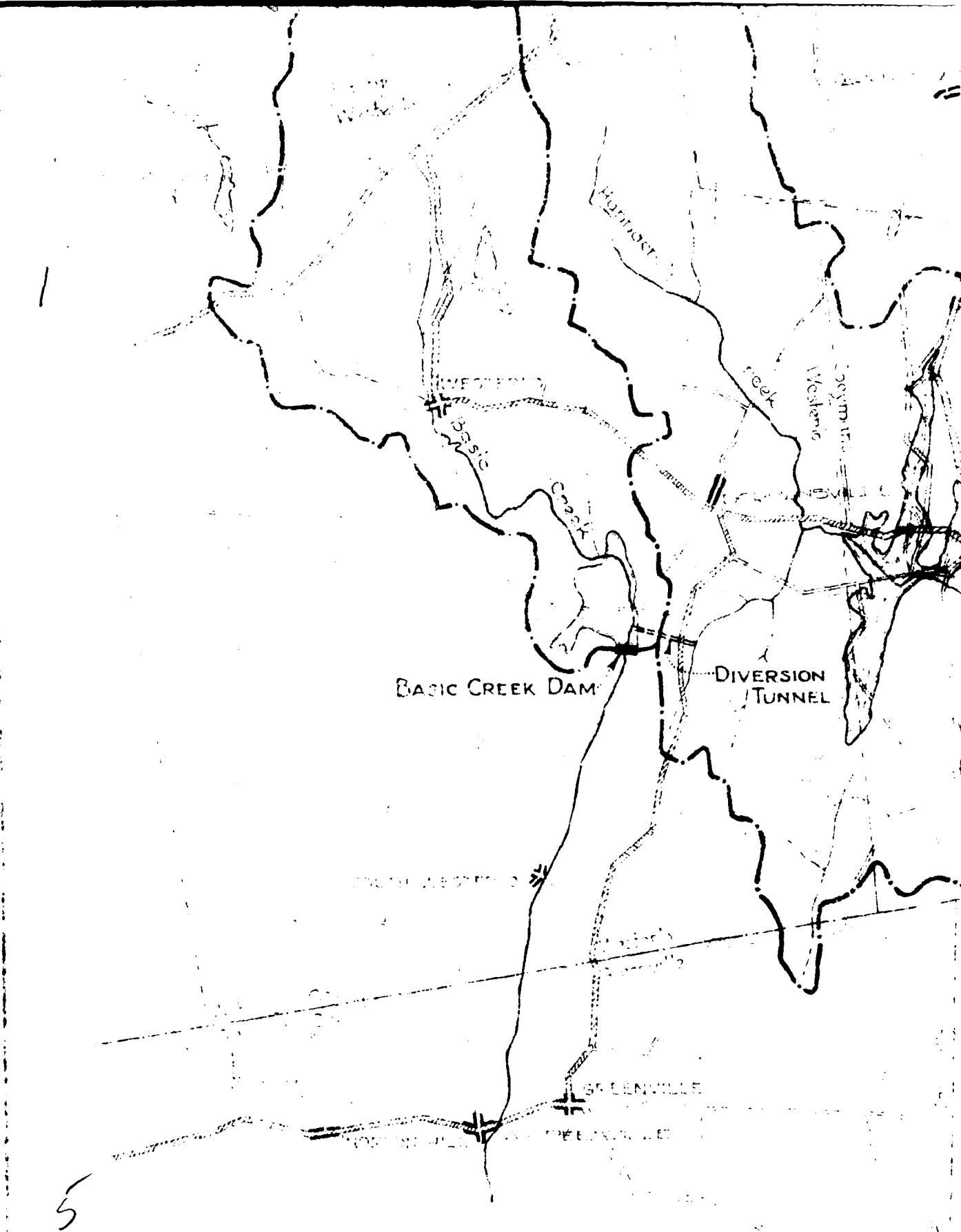
OF ALBANY, NEW YORK

OF WATER SUPPLY

THE
STANDARD WATER SUPPLY
STANDARD EASTON
STANDARD EASTON

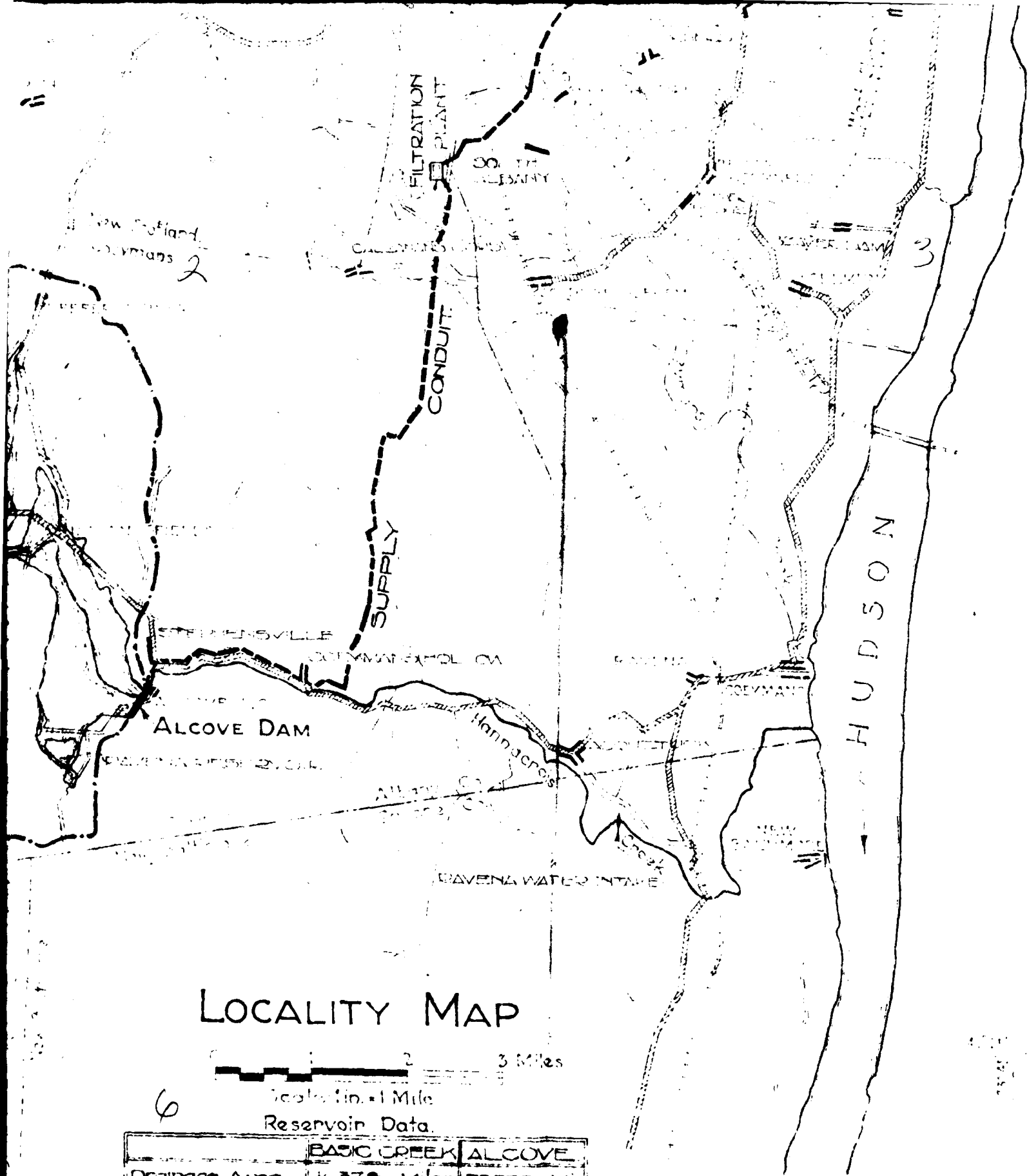
STANDARD WATER
STANDARD

STANDARD WATER
STANDARD EASTON



See Roads Map of this area

of Greenville, Pa.



LOCALITY MAP

Scale: 1 in. = 1 Mile

Reservoir Data

	BASIC CREEK	ALCOVE
Drainage Area	1637.5 sq. miles	5255.5 sq. Mi.
Elev. Flow Line	940	618
Area at Flow Line	265 Acres	1440 Acres
Storage	0.67 Million Gal.	12.8 Million Gal.

W. H. H. MAN, JR. ENGINEER AND ARCHITECT

10-10-28

4

SECTION NO. 1
CONTRACT NO. 1

BASIC CREEK DAM

February 25, 1928

CONTRACT DRAWINGS IN THIS SET

NAME	SHEET NO.	DATE
Location Map	1	10-10-28
General Plan of Dam and Foundation	2	10-10-28
Plan of Dam and Foundation	3	10-10-28
Plan of Dam and Foundation	4	10-10-28
Plan of Dam and Foundation	5	10-10-28
Plan of Dam and Foundation	6	10-10-28

7

4

SECTION NO. 1
CONTRACT NO. 1
C CREEK DAM.

Feb. 25, 1918

DRAWINGS IN THIS SET		
NAME	SHEET NO.	FILE NO.
1. GENERAL PLAN	1	DRYING
2. ELEVATION OF DAM	2	DRYING
3. ELEVATION OF DAM	3	DRYING
4. ELEVATION OF DAM	4	DRYING
5. ELEVATION OF DAM	5	DRYING
6. ELEVATION OF DAM	6	DRYING

8

DRAINAGE AREA = 12.37 SQ. MI.

RESERVOIR FLOW LINE = ELEV. 1045.5

TOP OF EMBANKMENT = ELEV. 1045.5

RESERVOIR AREA AT FLOW LINE = 2.1

VOLUME BETWEEN TUNNEL INLET ELEV. 925.0 & FLOW LINE = 1.1

OVERALL LENGTH OF DAM = 90

LENGTH OF EMBANKMENT SECTION = 80

MAXIMUM HEIGHT ABOVE GROUND SURFACE = 30

LENGTH OF SPILLWAY = 100

MAXIMUM HEIGHT ABOVE NATURAL ROCK SURFACE = 45.5

SPILLWAY CAPACITY (WATER SURFACE AT ELEV. 1045.5 FT. DEPTH = 414

CAPACITY OF SPILLWAY WASTE CHAMBER

AT 2 FT. DEPTH = APPROX. 26

" 4 " " " = " 87

" 6 " " " = " 181

" 8 " " " = " 371

DESIGN OF SPILLWAY SECTION

MASONRY = 145 #/CU. FT.

UPLIFT = 33% OF FULL HEAD AT

DECREASING UNIFORMLY TO ZERO

RESERVOIR DESIGNED AS A DETENTION RESERVOIR

FOR ICE PRESSURE, BUT SPILLWAY SECTION WILL BE

OF 1900 #/LIN. FT. AND KEEP RESULTANT WITHIN

ALLOWABLE STRESS

Sq. Mi.

EV 940.00

EV 946.50

E = 265 ACRES

WE FLEM 310 2-870,000,000 GALLONS

812 Ft

762 Ft.

SURFACE = 21 Ft.

100 Ft.

TK SURFACE = 17.50 Ft.

DEPTH, 1 1/2 Ft. FREEBOARD WITH C = 3.70

4144 C.F.S. = 253 C.F.S. PER SQ. MI.

CHANNEL (N = .025)

K. 260 C.F.S.

870 "

1810 "

3770 "

SECTION

Ft.

D AT HEEL

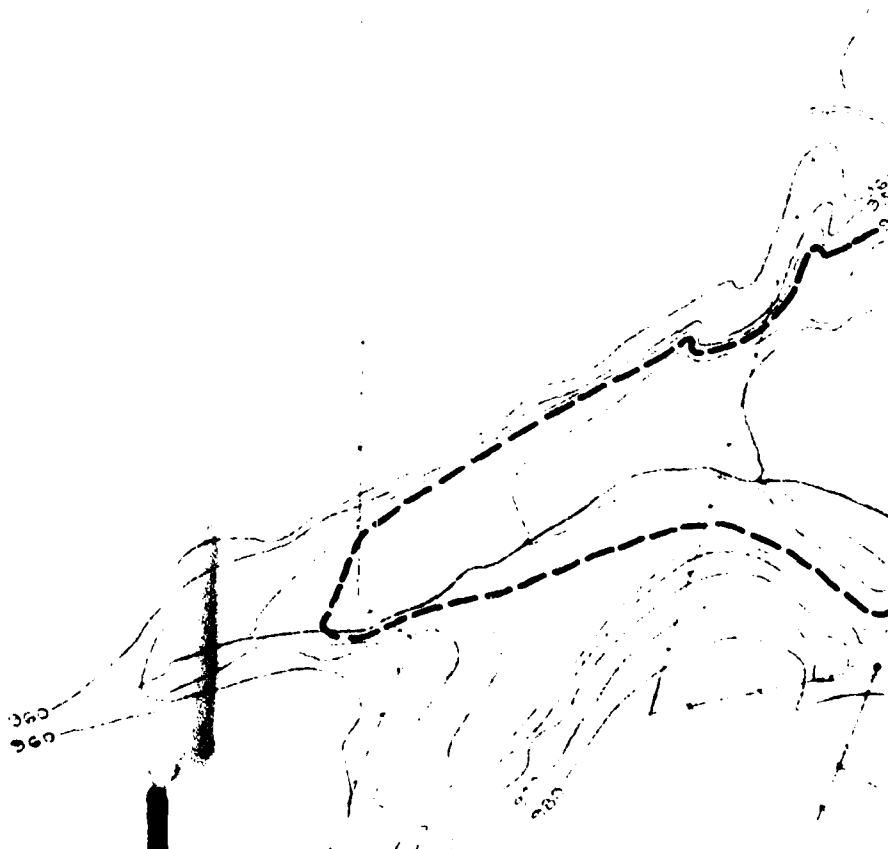
ZERO AT TOE

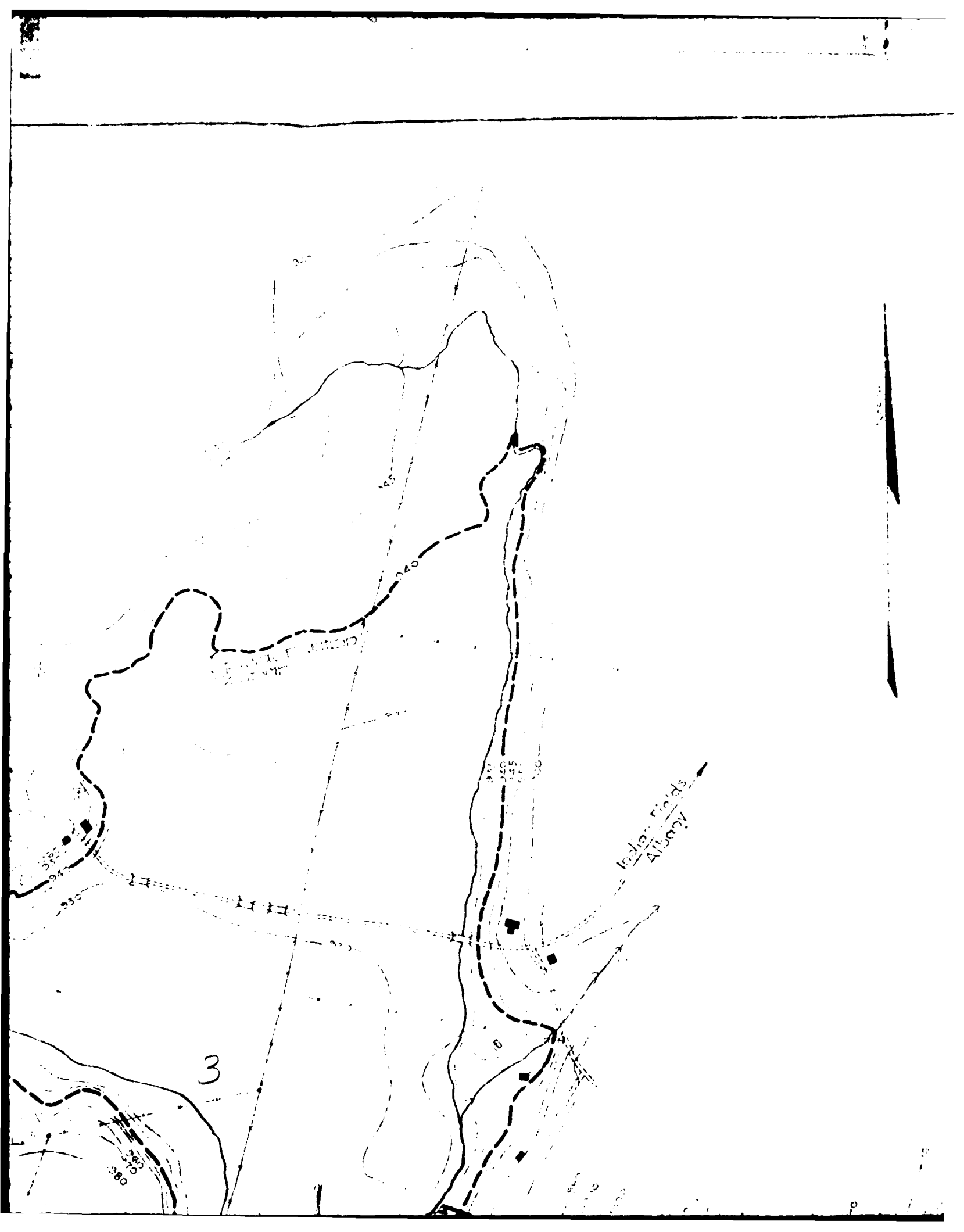
2

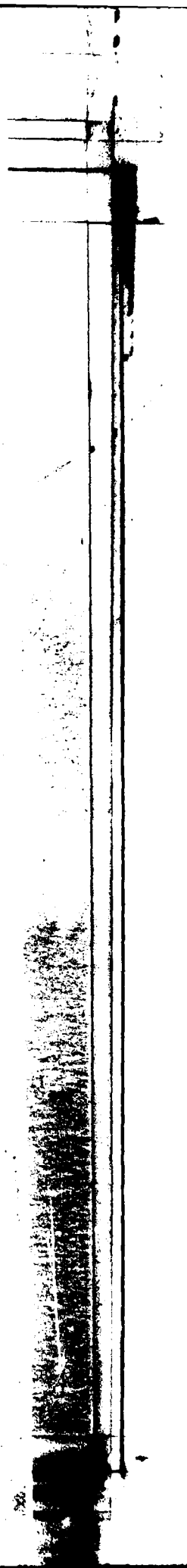
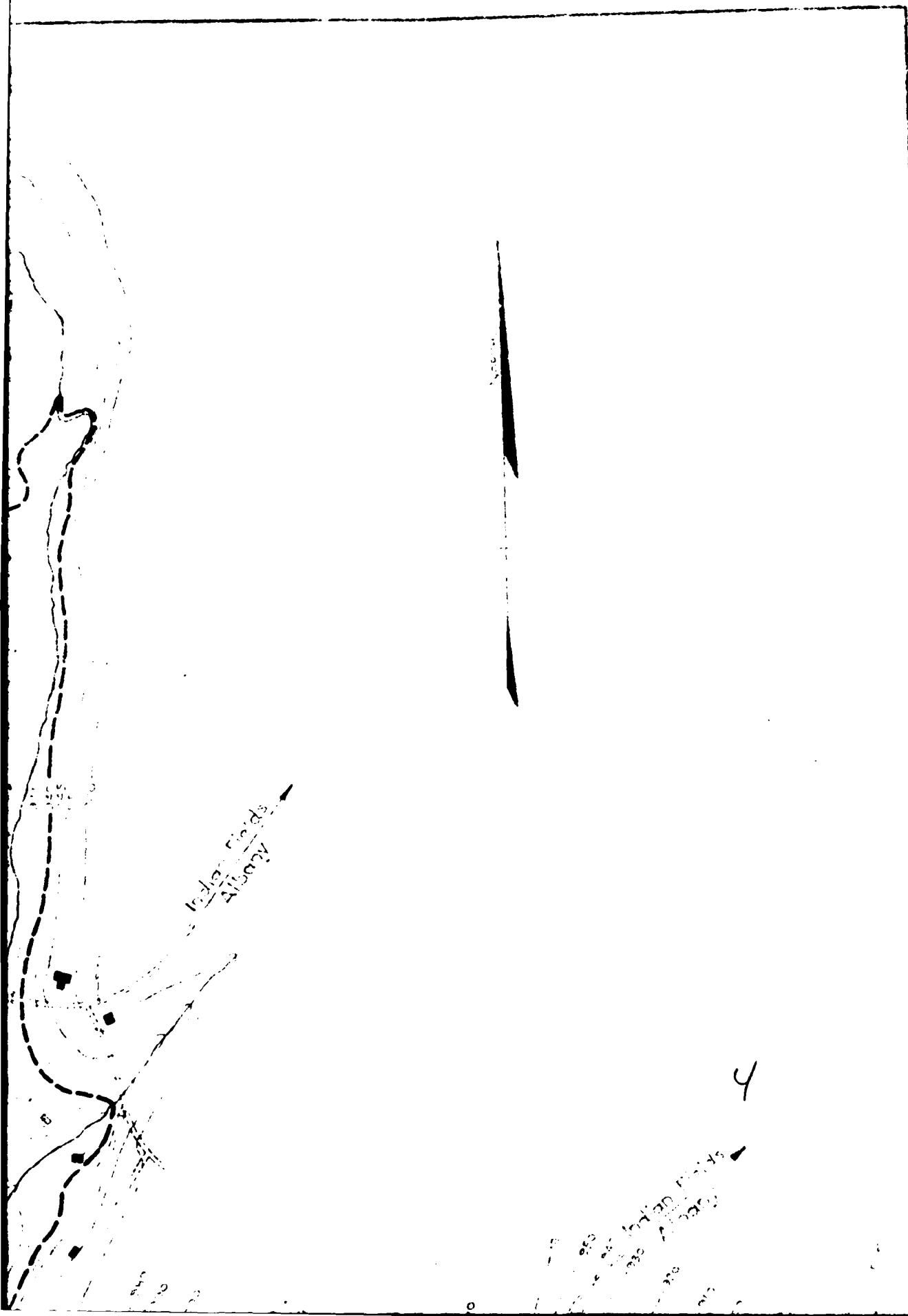
JOIR ONLY WITH NO ALLOWANCE

WIL WITHSTAND TOP THRUST

THIN MIDDLE 3RD.



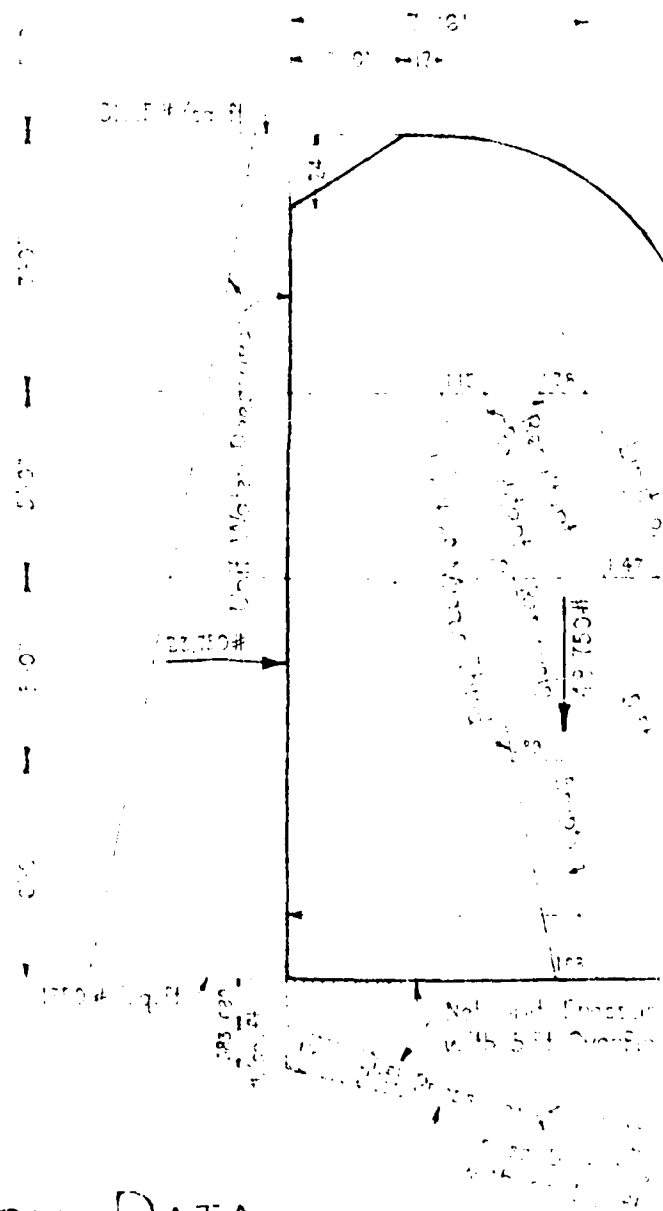




MASONRY - 145 #/CU. FT.

UPLIFT - 37% OF FULL HEAD AT
DECREASING UNIFORMLY TO ZERO AT

RESERVOIR DESIGNED AS A DETENTION RESERVOIR ON
100 TON PRESSURE, BUT SPILLWAY SECTION WILL WITH
STAND 1000 FT. LAM. AND KEEP RESERVANT WITHIN
100 TON PRESSURE.



5

DESIGN DATA

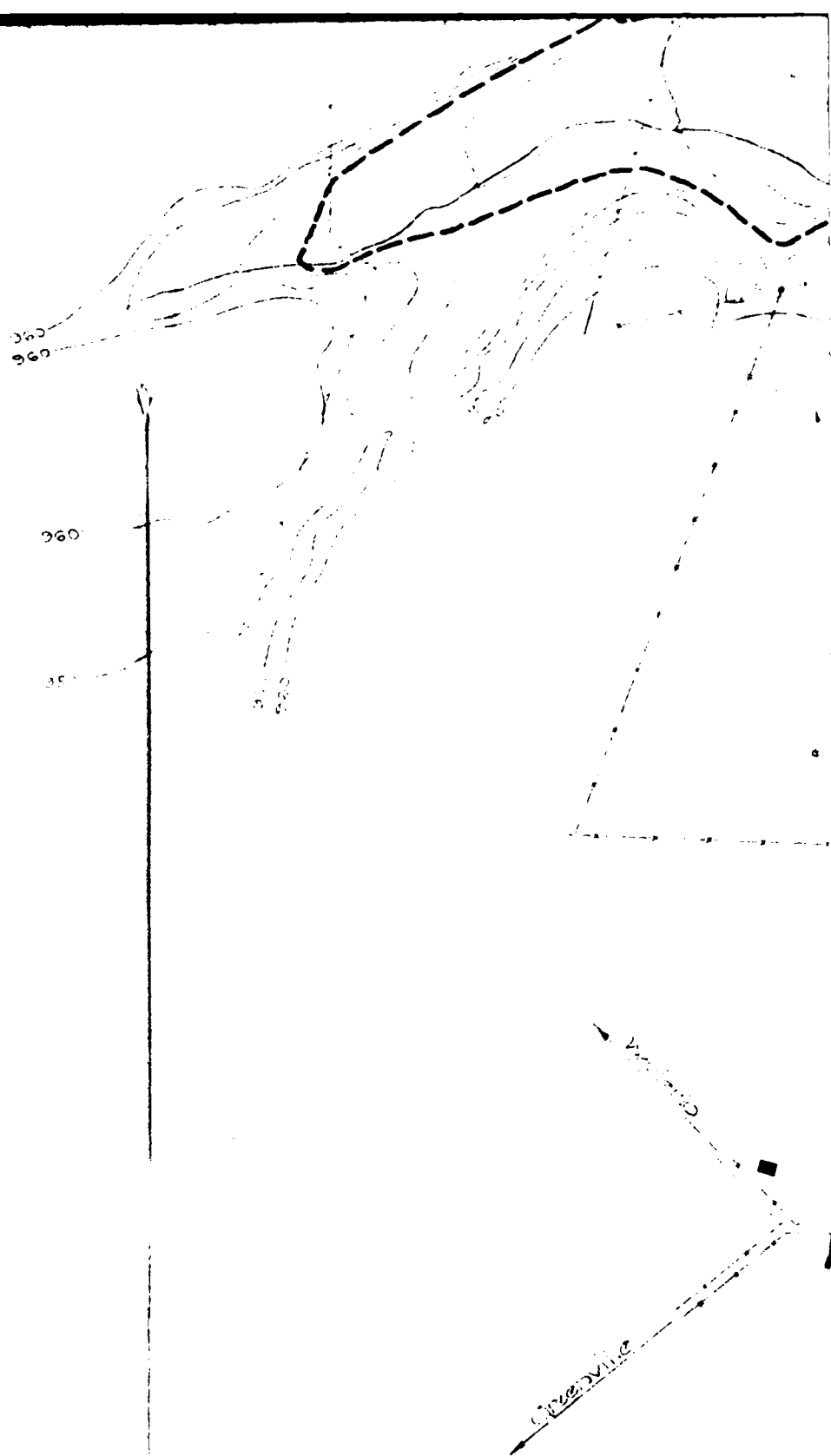
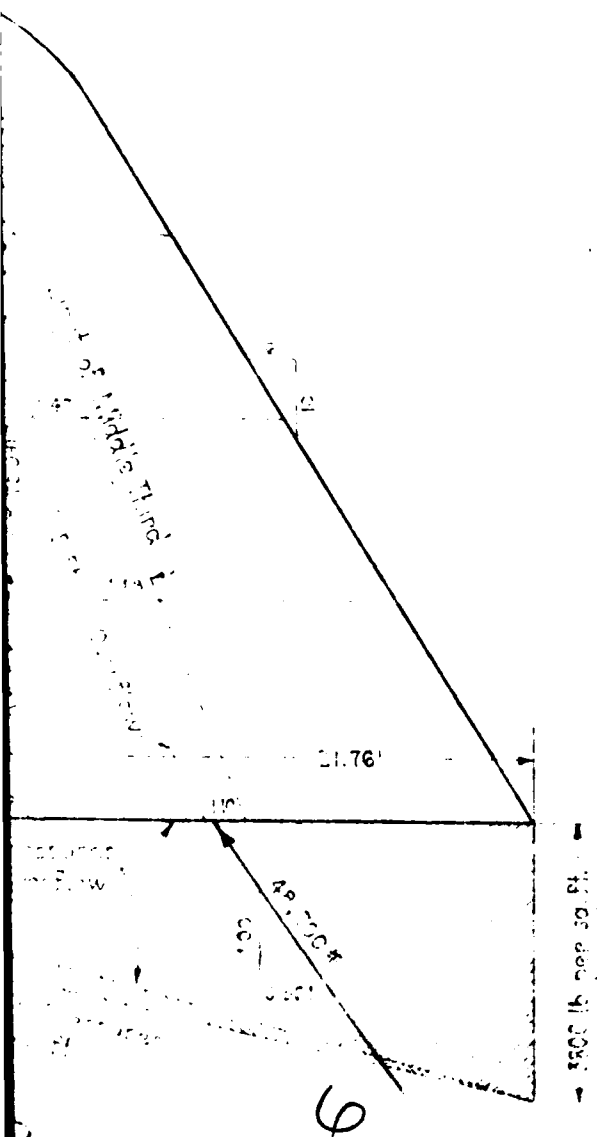
BASIC CREEK DAM AND RESERVOIR

7.

2

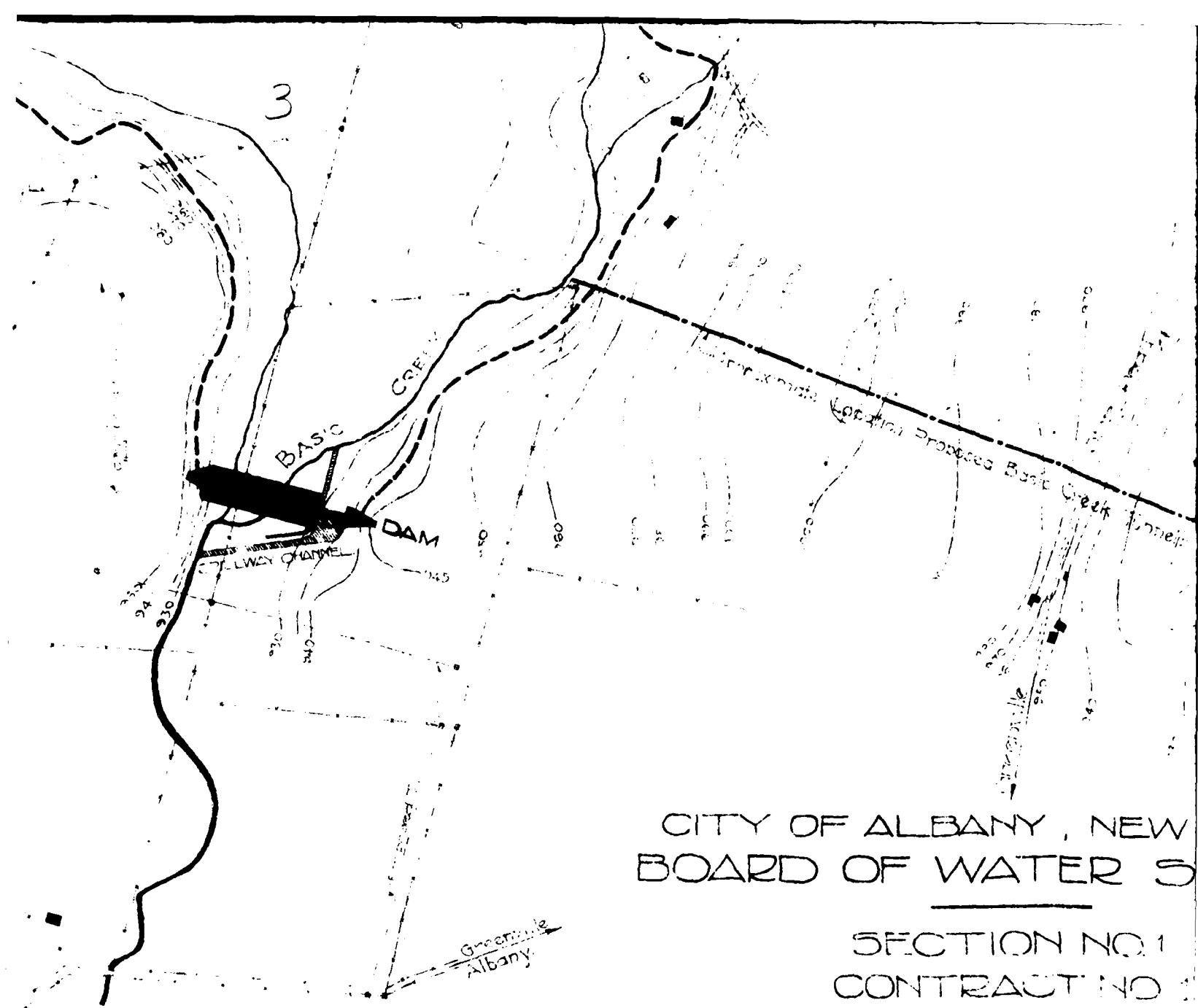
R ONLY WITH NO ALLOWANCE
WITH STAND TOP THRUST
IN MIDDLE 3RD.

F



TOPOGRAPHIC MAP OF

Series: 110



CITY OF ALBANY, NEW
BOARD OF WATER S

SECTION NO. 1
CONTRACT NO. 1

BASIC CREEK D TOPOGRAPHY OF RES AND DESIGN D2

AP OF RESERVOIR AREA

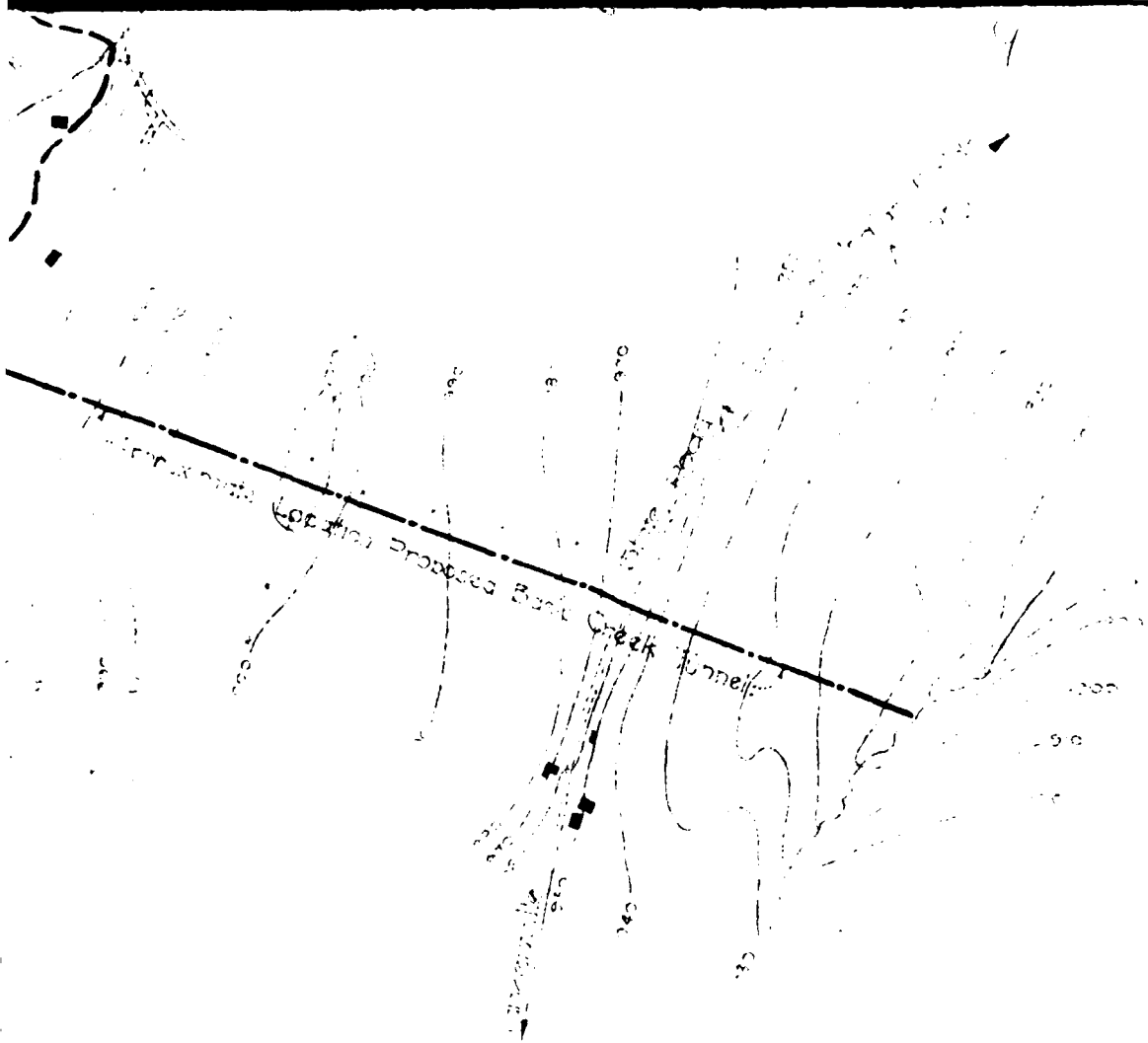
Scale 1 in = 500 ft.

WILLIAM H. HOLLAND AND SONS

Engineers

Albany, N. Y.

March 1912



CITY OF ALBANY, NEW YORK.
 BOARD OF WATER SUPPLY.

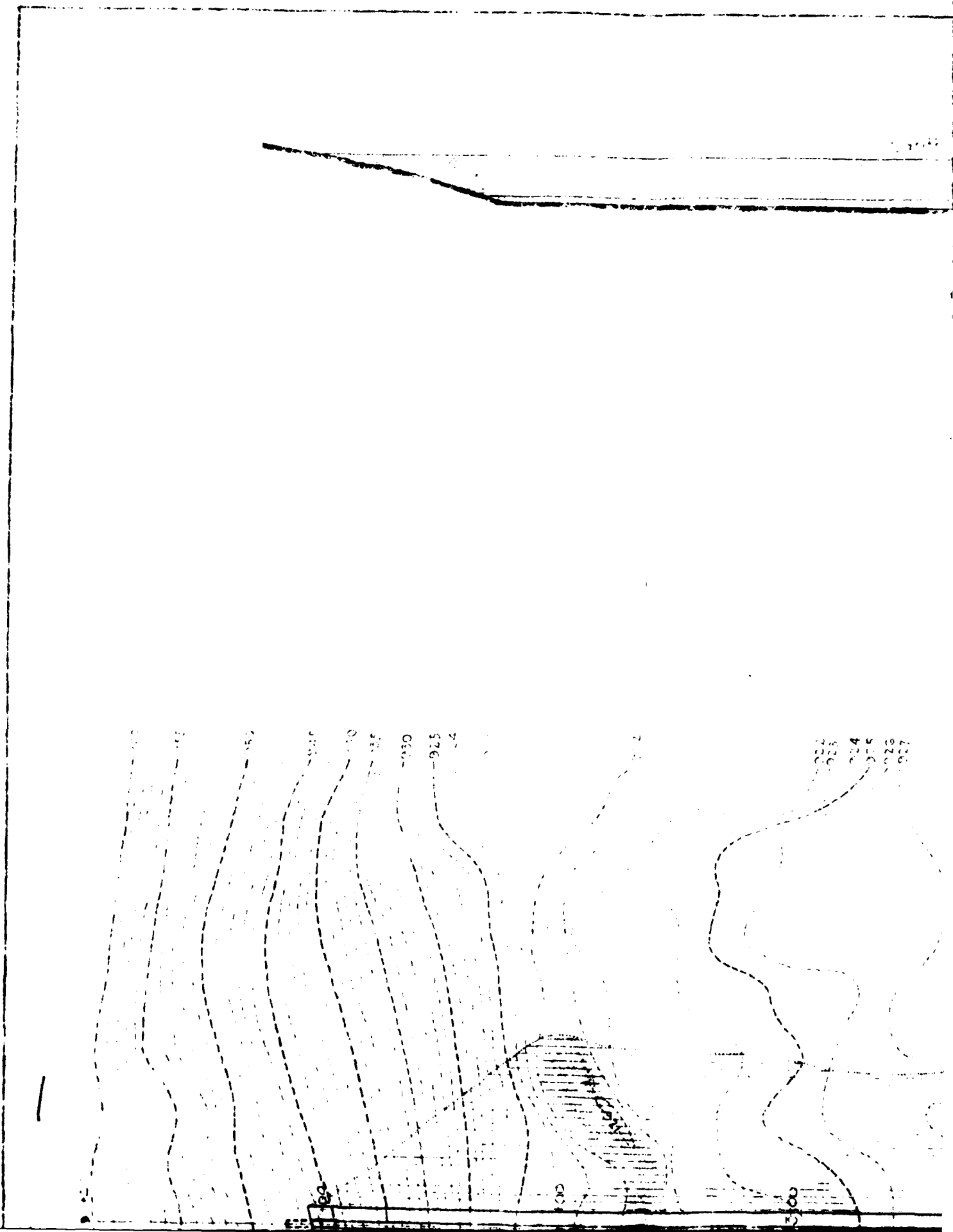
SECTION NO. 1
 CONTRACT NO. 1.

BASIC CREEK DAM.
 TOPOGRAPHY OF RESERVOIR
 AND DESIGN DATA.

JOHN D. ARDREY & SONS
 ENGINEERS
 ALBANY, N. Y.

ROBERT E. HUNTER
 Consulting Engineer
 ALBANY, N. Y.



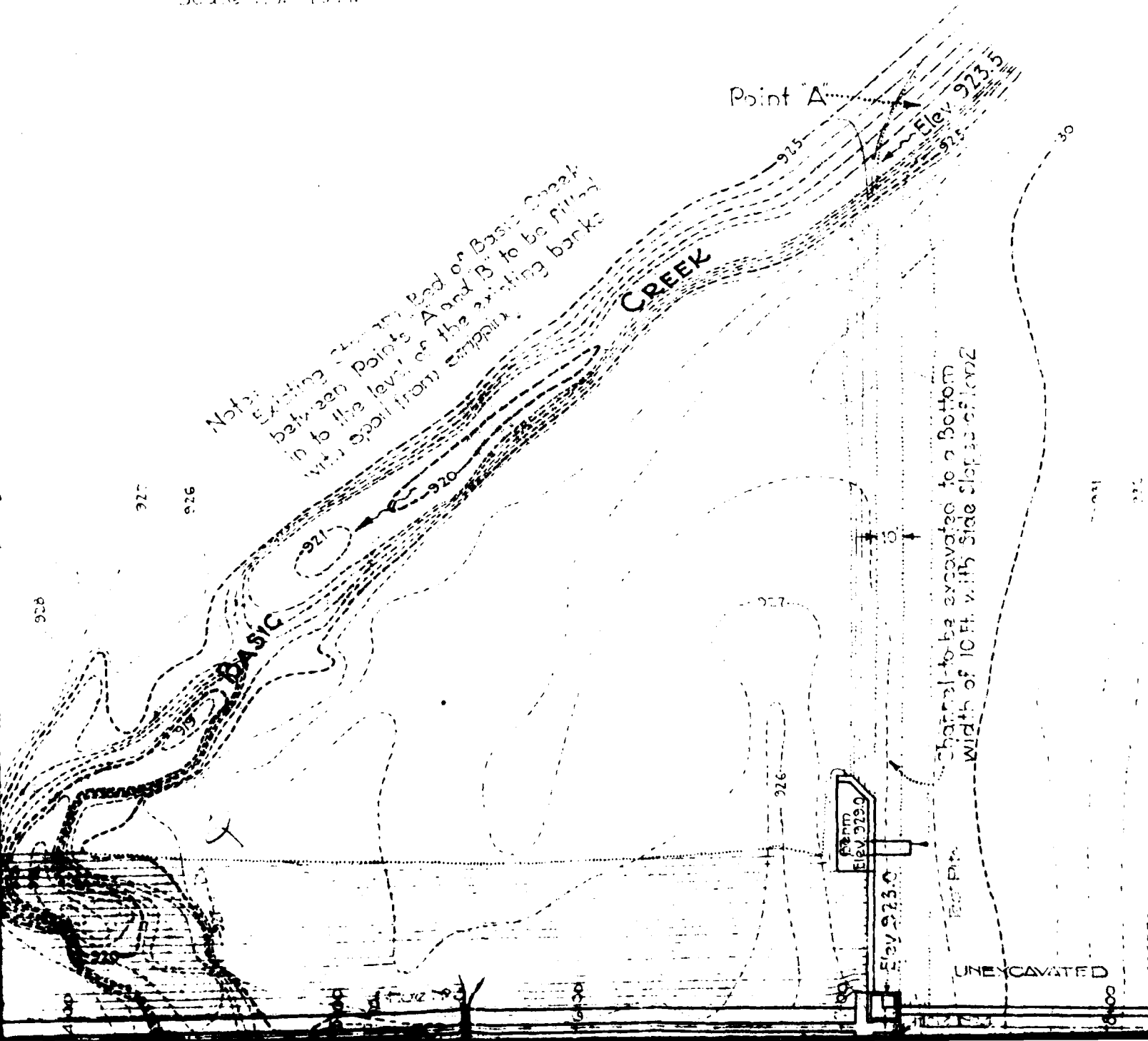


Water level Top Elev. 940.50

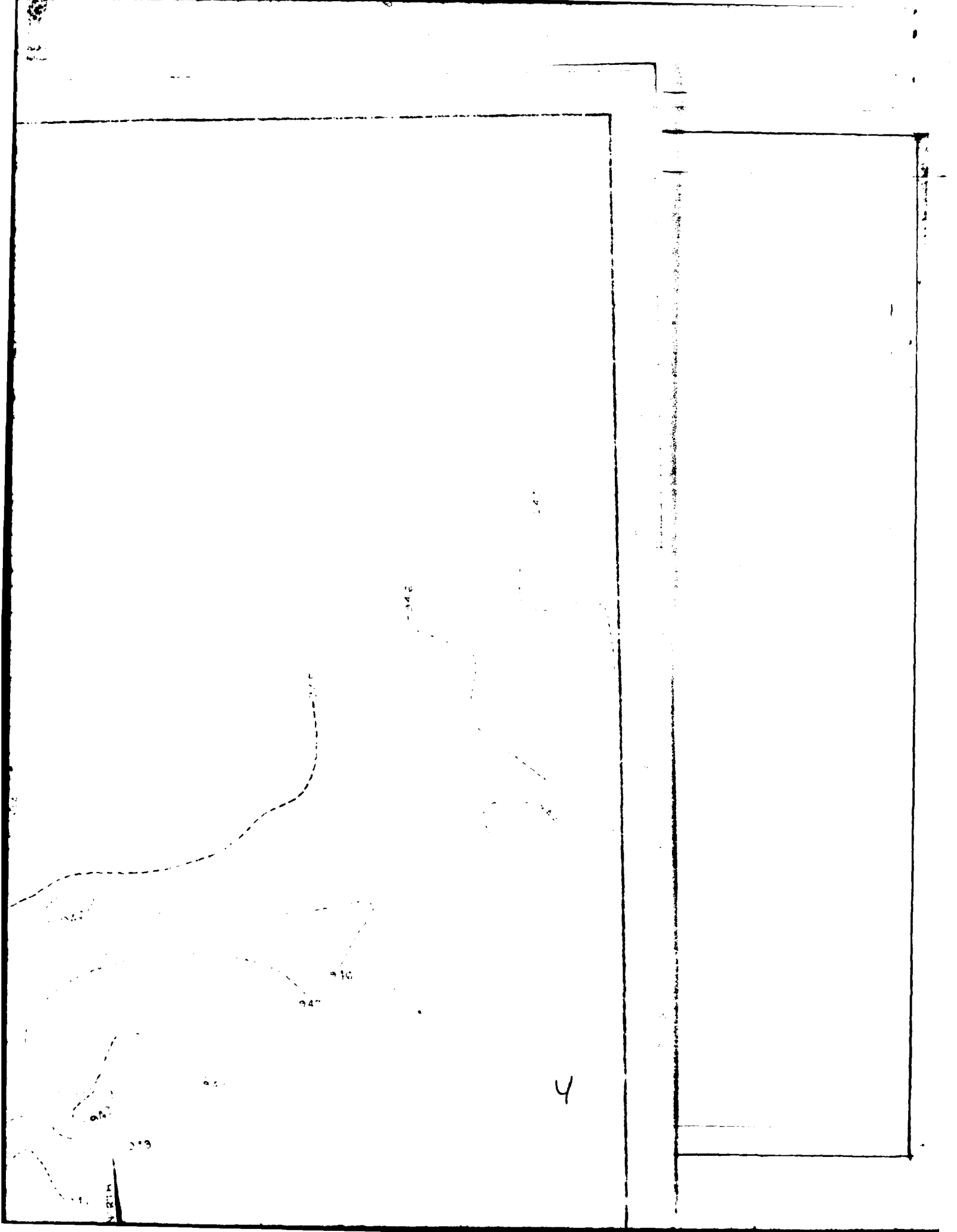
Concrete Gravity
Dam 100 ft.
Elev. 940.0

ELEVATION OF BASIC CREEK DAM

Scale: 1 in. = 40 Ft.



Year	Percent of Population Aged 65 and Over
1950	7.0
1960	8.5
1970	10.5
1980	12.5



AD-A105 735

NEW YORK STATE DEPT OF ENVIRONMENTAL CONSERVATION ALBANY F/6 13/13
NATIONAL DAM SAFETY PROGRAM. BASIC CREEK DAM (INVENTORY NUMBER --ETC(U)
FEB 61 6 KOCH

DACWS1-79-C-0001

NL

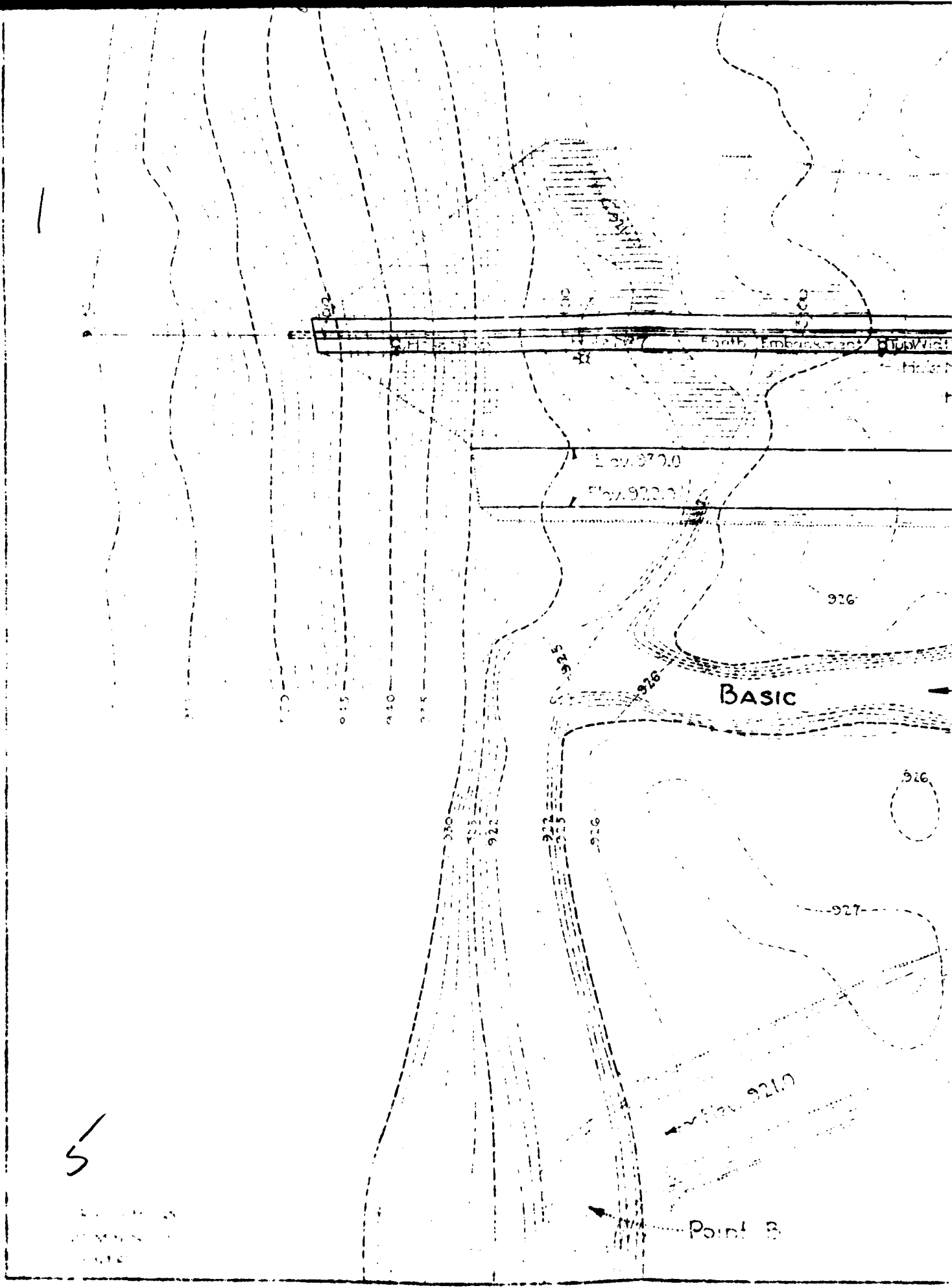
UNCLASSIFIED

2 1/2 2

40
2005-7-15



END
PAGE
11 N
DTIC



S

1:25,000
1960

Point 3

BASIC

Elev. 920.0
Elev. 922.0

916

916

917

Elev. 921.0

916

915

914

913

912

911

910

909

908

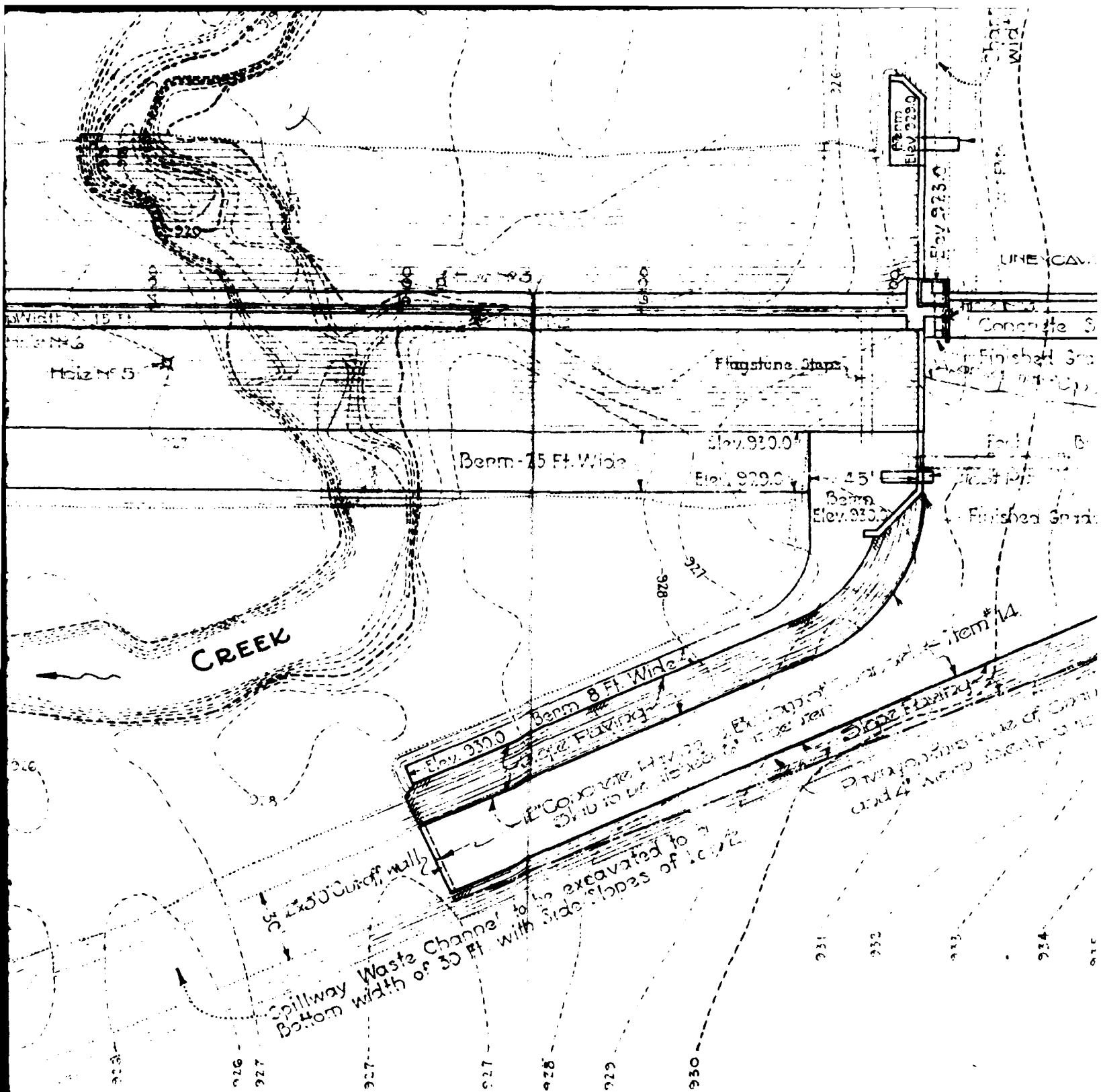
907

906

905

904

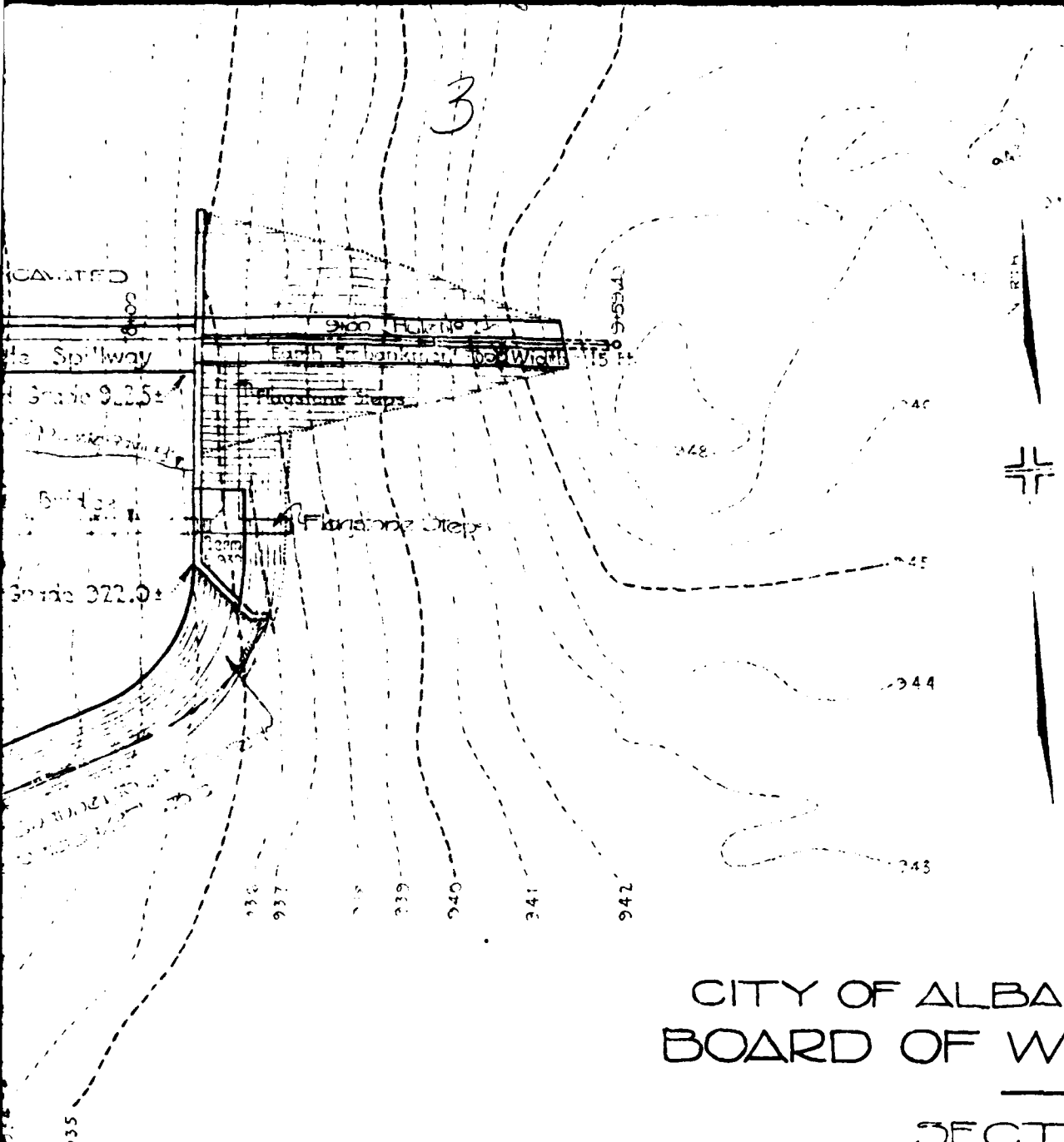
903



LOCATION PLAN OF BASIC CREEK DAM

Scale: 1 in. = 40 Ft.

6



CITY OF ALBANY, NEW YORK BOARD OF WATER SUPPLY

SECTION NO. 1
CONTRACT NO. 1

BASIC CREEK DAM LOCATION PLAN AND ELEVATIONS

WHITMAN REQUARDT AND SMITH
ENGINEERS
50 N. 1st St.
ALBANY, N. Y.

200' =
Scale
1 inch =

Sheet No. 3.

4

AREA



340

345

344

343

CITY OF ALBANY, NEW YORK.
BOARD OF WATER SUPPLY.

SECTION NO. 1
CONTRACT NO. 1

BASIC CREEK DAM.
LOCATION PLAN AND ELEVATION

PREPARED BY AND SMITH
ENGINEERS
ALBANY, N.Y.

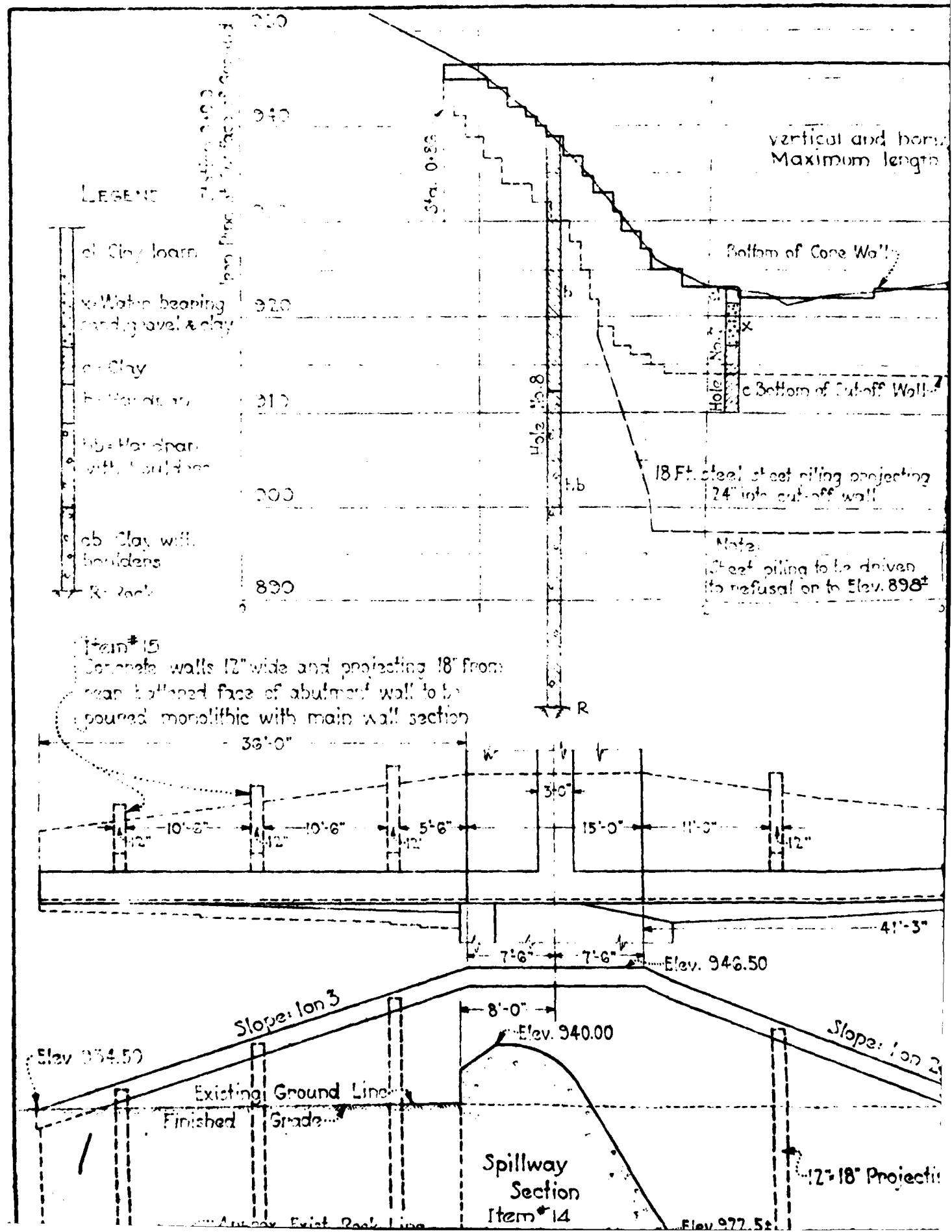
ROBERT L. HORTON
CONSULTING ENGINEER
February 25, 1928.

Sheet No. 3.

8

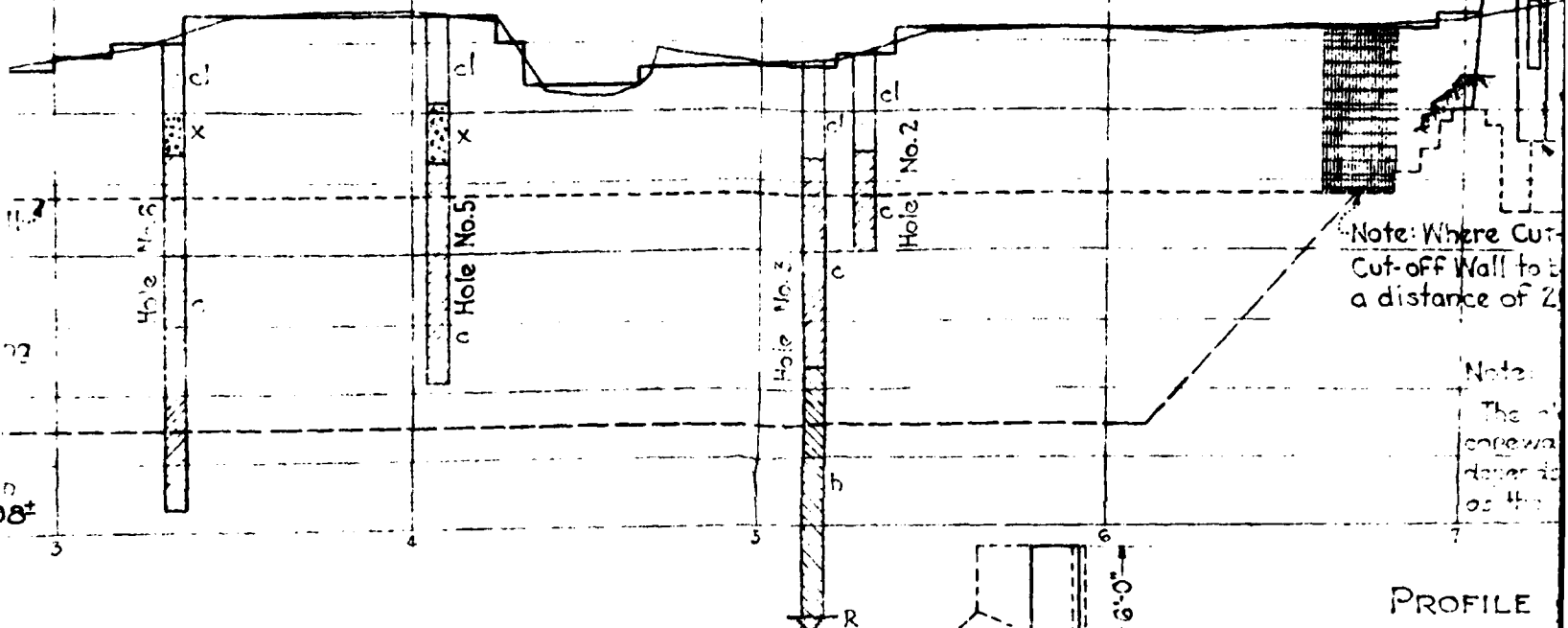


10-51195



Top of Corewall and Crest of Embankment, Elev. 946.50

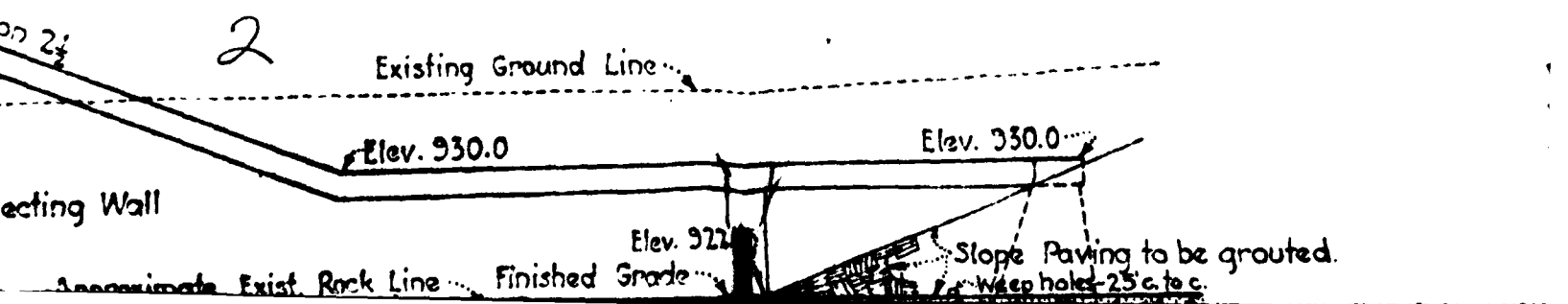
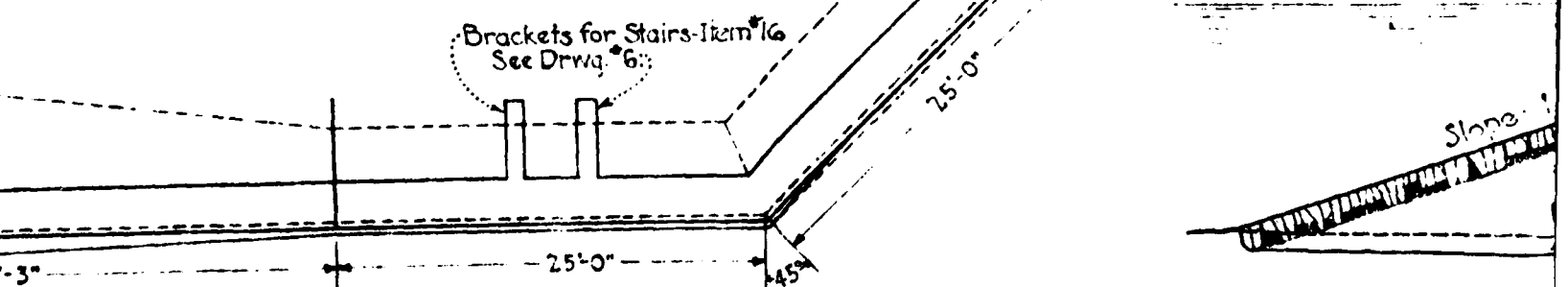
Horizontal construction joints in Corewall to be staggered.
 Distance of horizontal joint to be 60 ft.

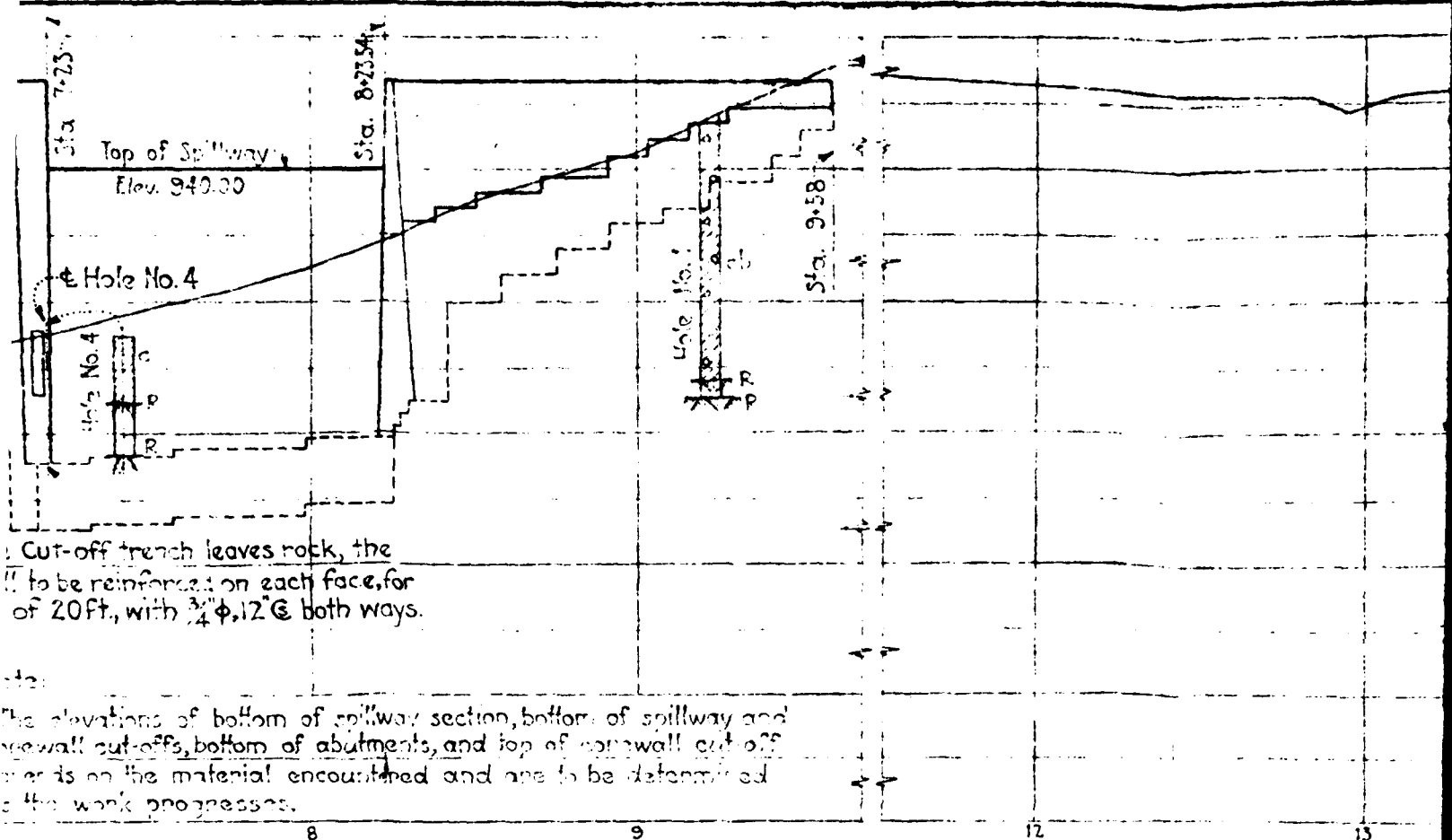


PROFILE

Scales: H

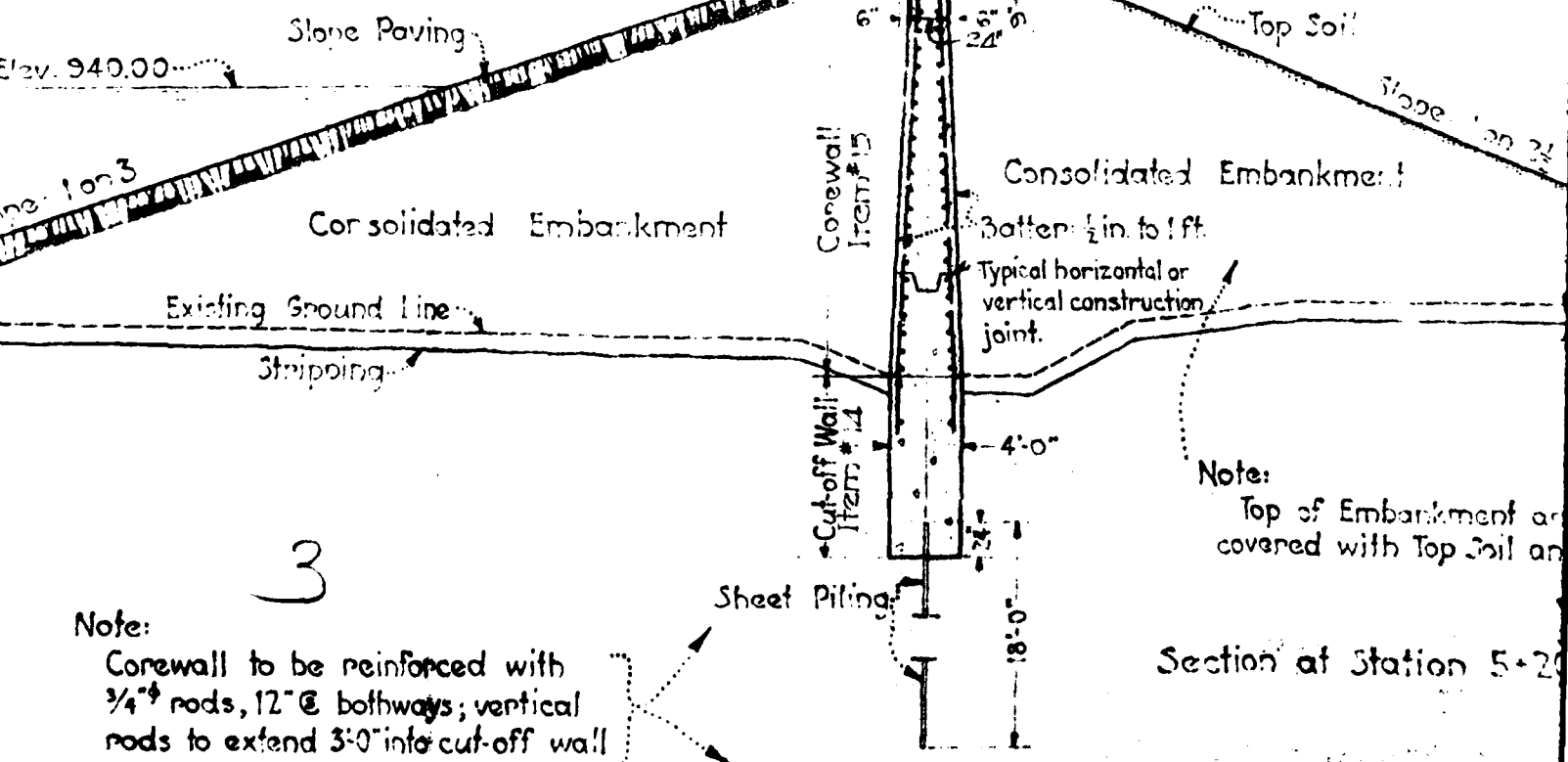
Flow Line, Elev. 9

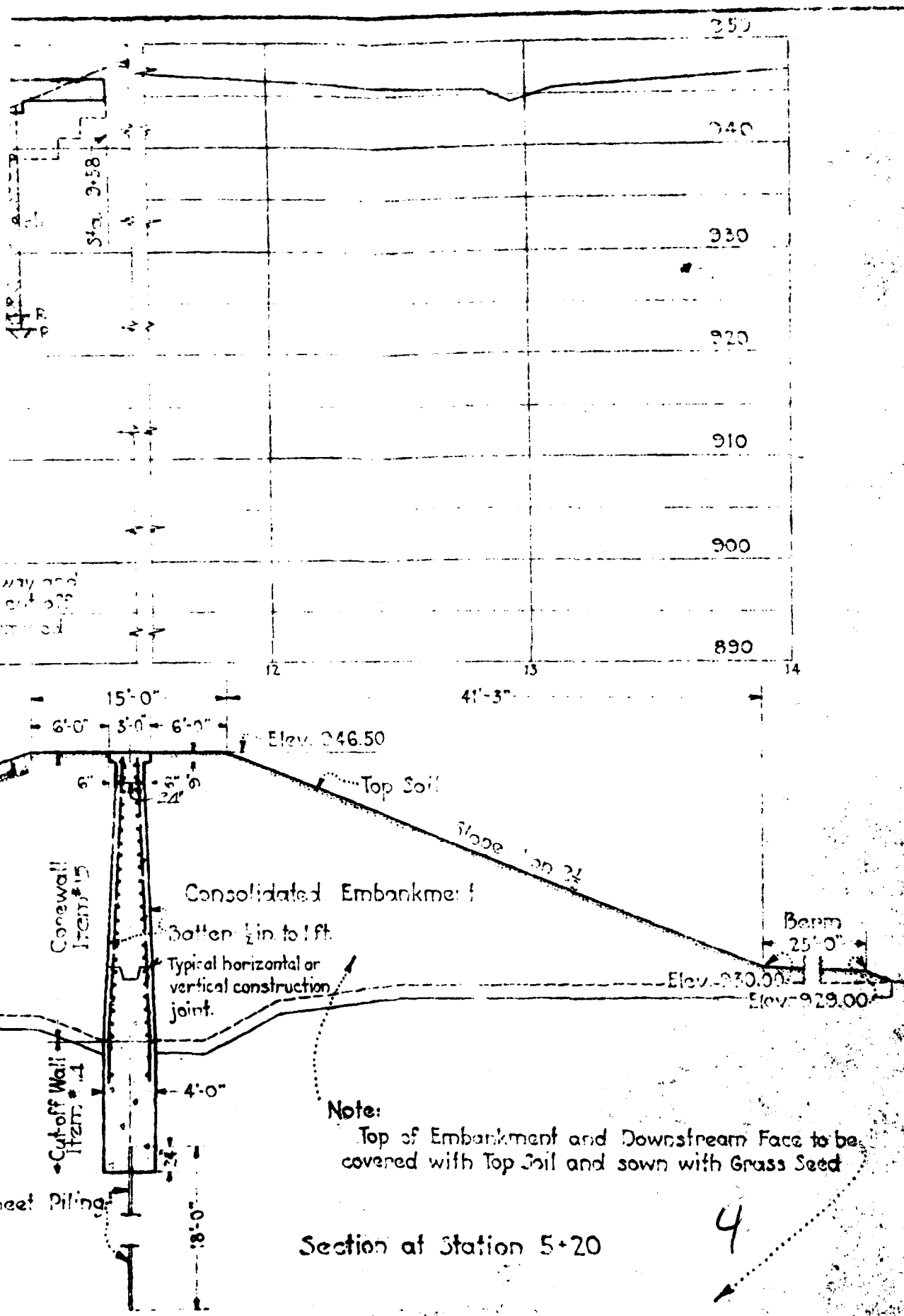


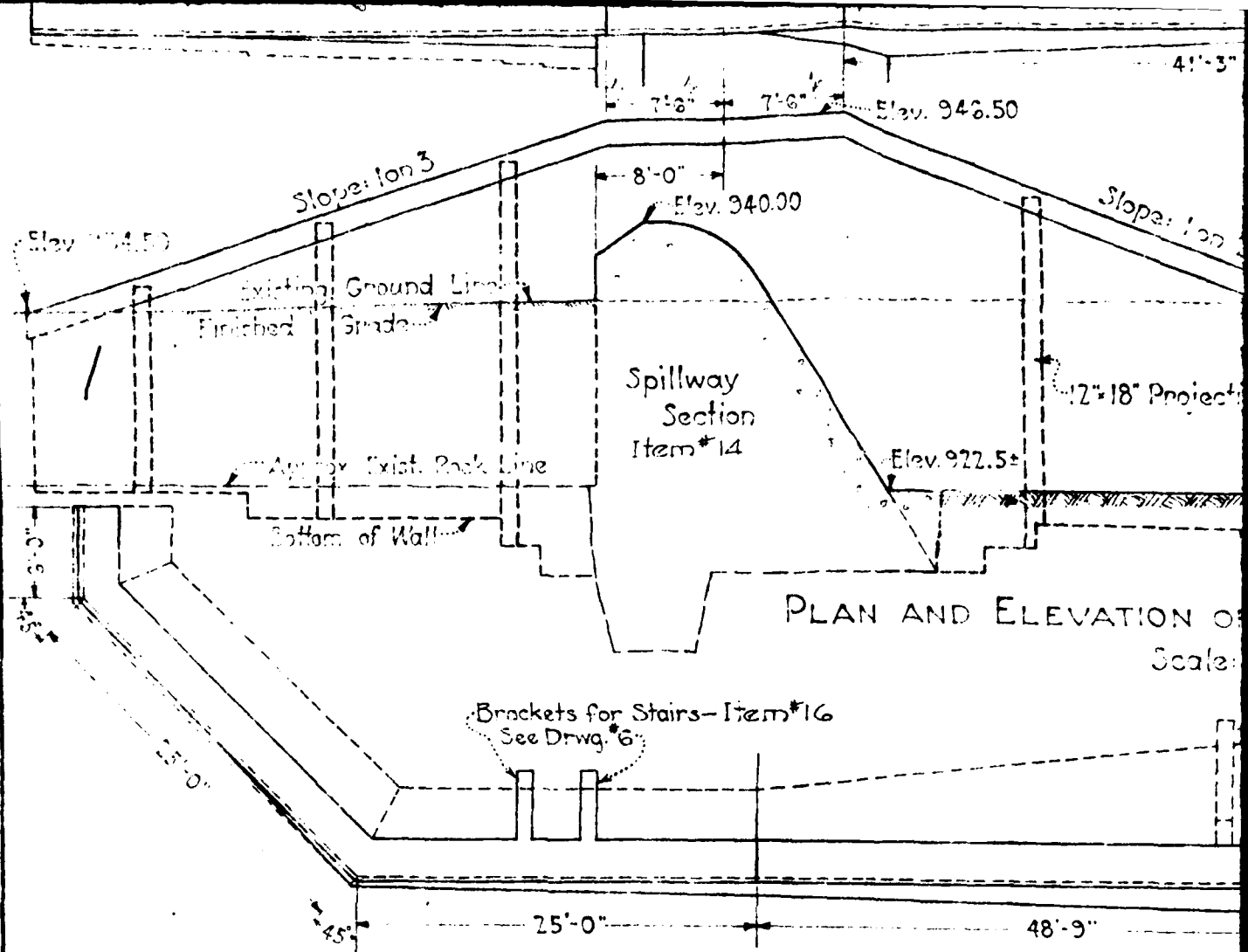


SECTION ON AXIS OF DAM

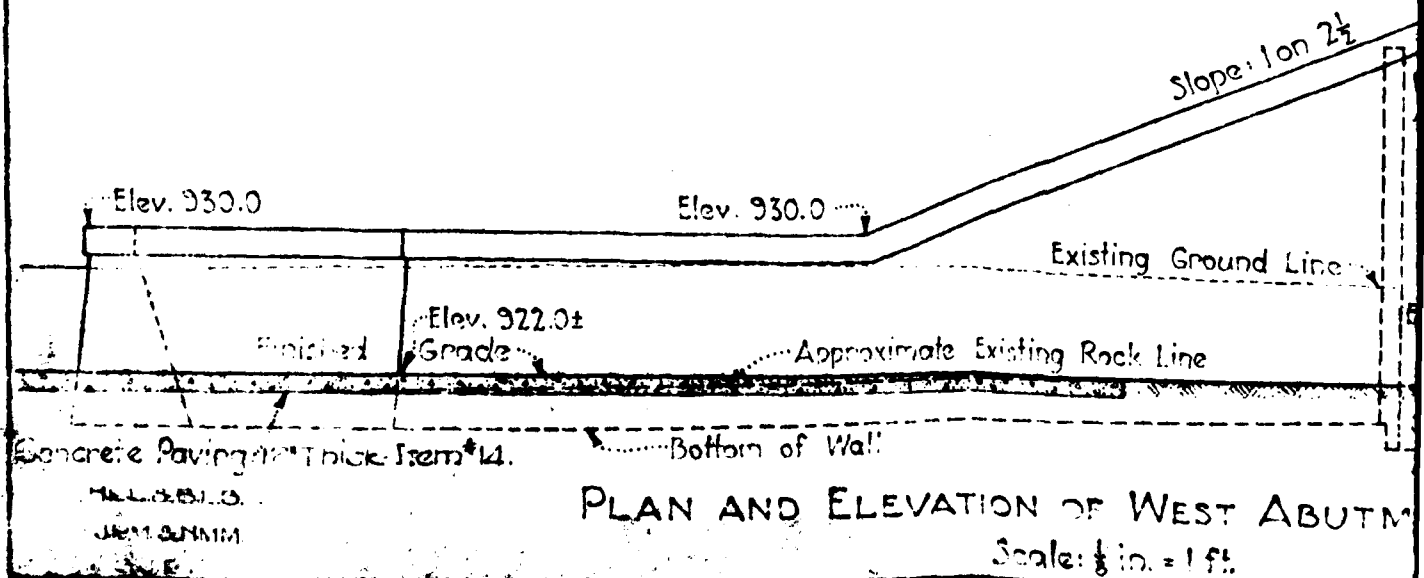
Notes: Hor 1"=40', Vert 1"=10'

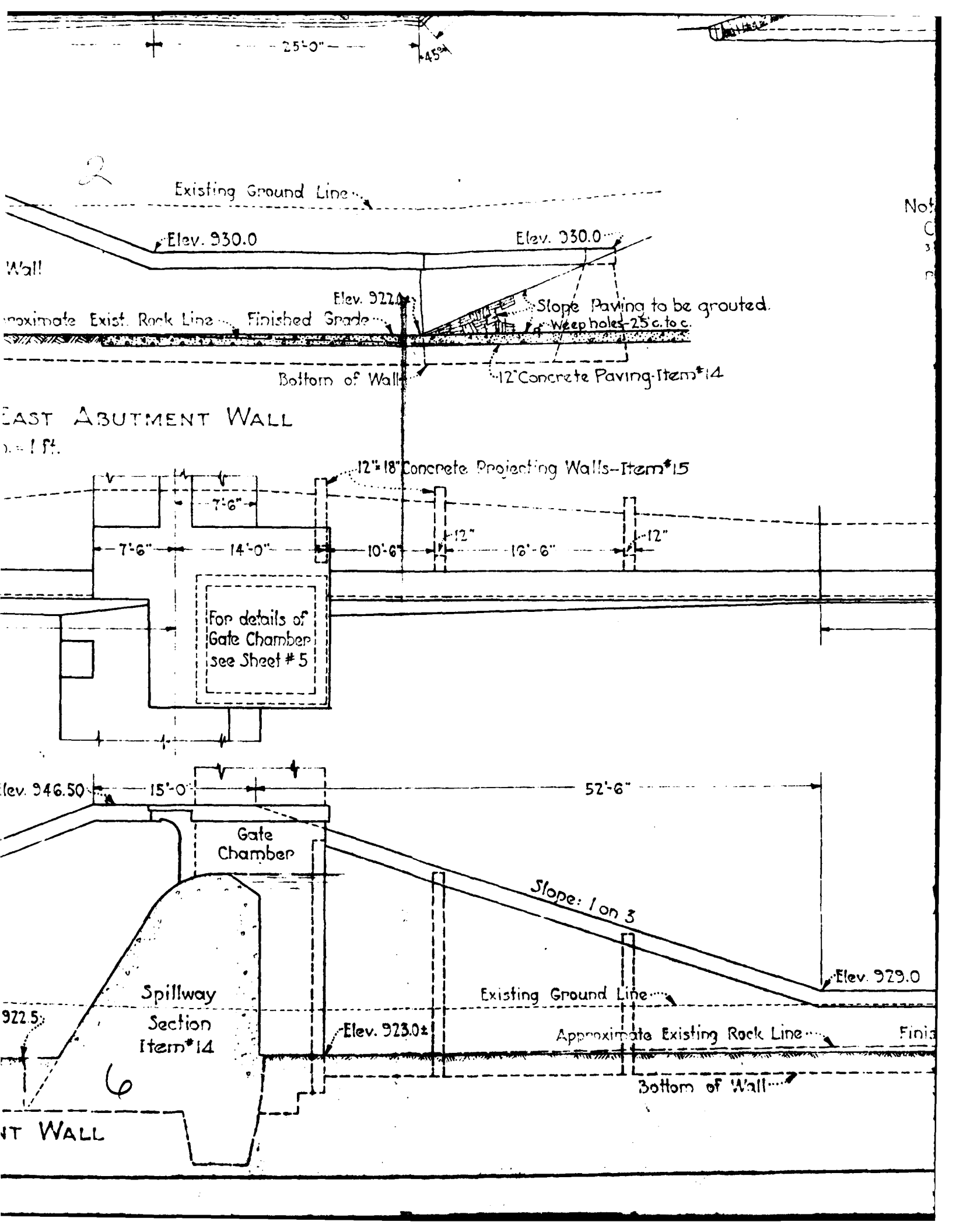






For Typical Section of Abutment Walls,
see Section E-E, Sheet No. 5
Concrete in Abutment Walls-Item #14.





Station 7+00

Note:

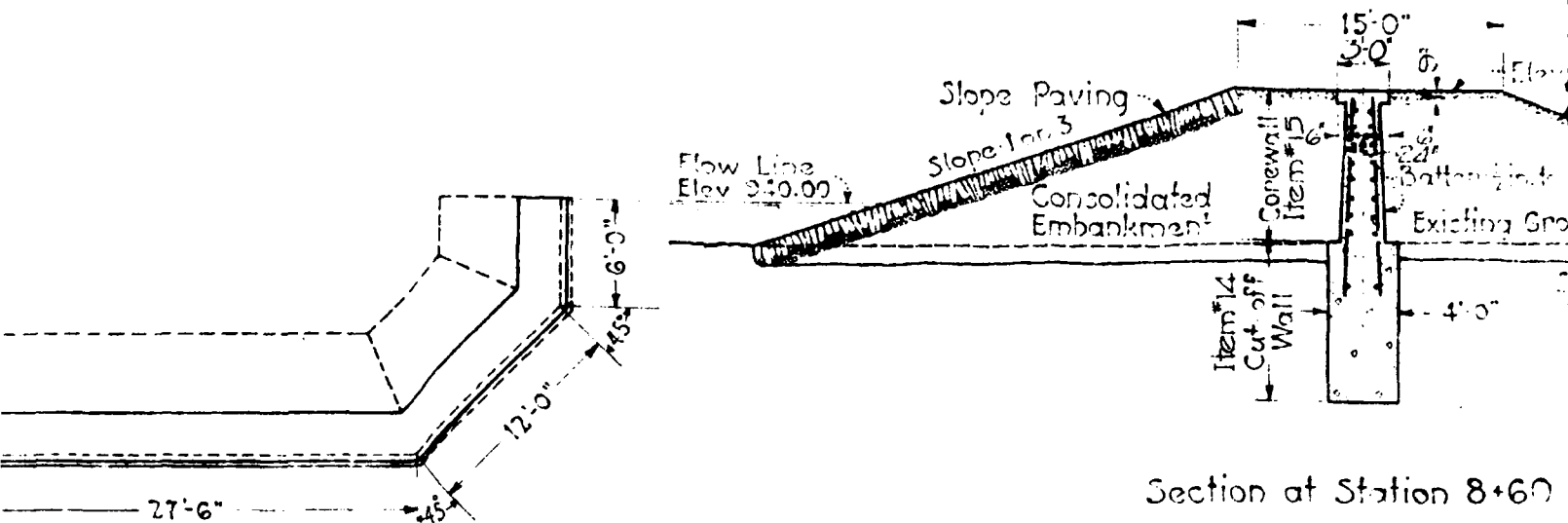
Corewall to be reinforced with $\frac{3}{4}$ " rods, 12" @ bothways; vertical rods to extend 3'-0" into cut-off wall

Sheet Piling

Note:

Top of Embankment or covered with Top Soil or

Section at Station 7+00



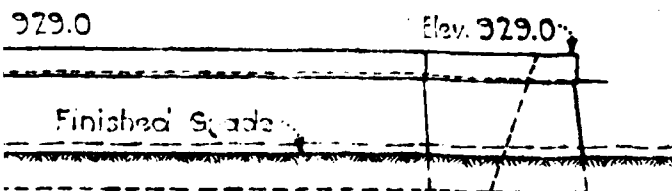
Section at Station 8+60

TYPICAL SECTIONS OF EARTH DAM AND ABUTMENT
Scale: $\frac{1}{8}$ in. = 1 ft.

CITY OF ALBANY, NEW YORK
BOARD OF WATER SUPPLY

SECTION NO. 1
CONTRACT NO. 1

BASIC CREEK DAM
EARTH DAM AND ABUTMENT



WHITMAN, REQUARDT AND SMITH
Engineers

Scales as shown

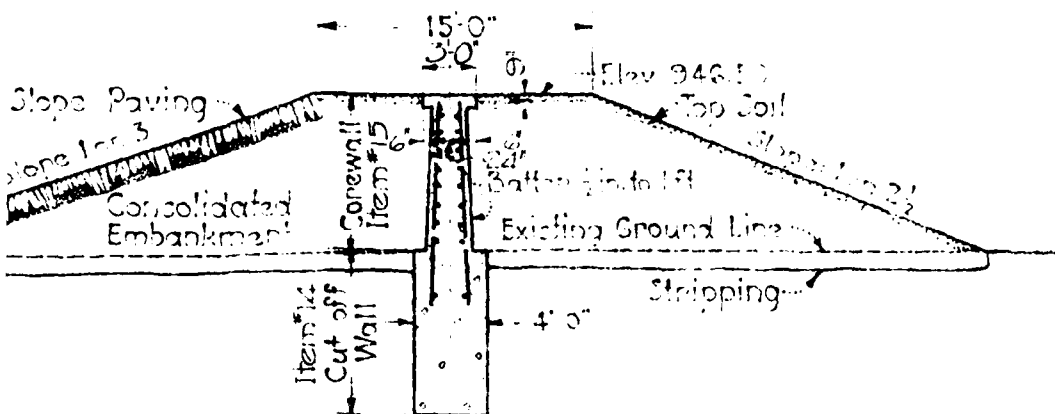
ROBERT
CARROLL
REVIEWED

Sheet No. 4

Note:

Top of Embankment and Downstream Face to be covered with Top Soil and sown with Grass Seed

Section at Station 5+20



Section at Station 8+60

TYPICAL SECTIONS OF EARTH DAM
Scale: $\frac{1}{8}$ in. = 1 ft.

OF ALBANY, NEW YORK
D OF WATER SUPPLY

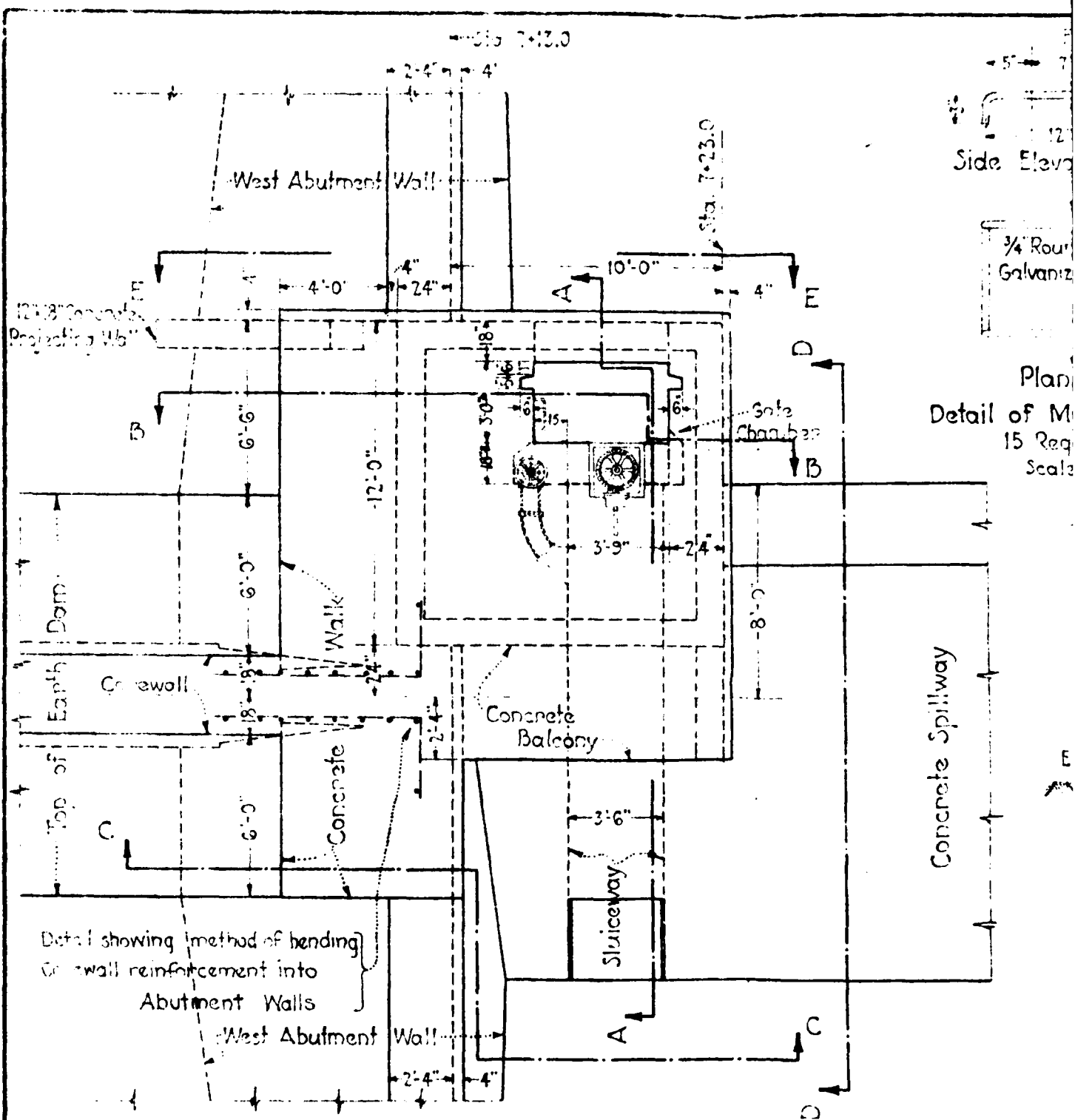
SECTION NO. 1
CONTRACT NO. 1

MASIC CREEK DAM.
DAM AND ABUTMENT DETAILS

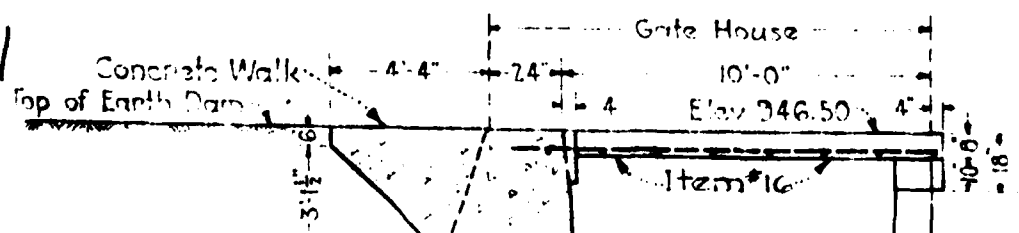
WARD AND SMITH
Engineers
as shown

ROBERT F. HORTON
Consulting Engineer
February 23, 1928

Sheet No. 4



PLAN OF GATE CHAMBER AND SLUICWAY
Scale: $\frac{1}{4}$ in. = 1 Ft.



Face of Wall

ation

nd
zed

Manhole Step
quired
1:1

Elev. 922.5

Elev. 946.50

4'-4"

1/2" ϕ , 5' G

1/2" ϕ , 18' G

3/8" ϕ , 6' G

Cast Iron Bracket

Item #14

3/4" Galv. Manhole Steps, 18' G

4-3/4" ϕ Rods

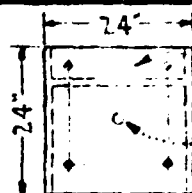
3/4" ϕ , 12" G 5' Long

Cast Iron Wall Thimble, 6" 10" 1/4" thick
drilled to fasten 42" 60" Sluice Gate

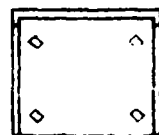
Elev. 923.0

Elev. 923.0

GATE CHAMBER AND SLUICeway
SECTION A-A
Scale: 1/4 in. = 1 Ft.



Plan



Elevation
Detail
Cast Iron
Scale: 1/2" = 1'

Foundations of Spillway,
and Abutment Walls to
such depth as the Eng

TYPICAL SECTION
Scale: 1/4 in.

2

Elev. 946.50

4'-4"

Item #16

12'-0"

4"

3-1/2" ϕ

Gate House

12'-0"

Elev.

Three Gate Stand to be ball-bearing, and geared for two speeds

• Hole for string, axle stem

4-1" ϕ x 30"
Hook Bolts

Section

Bracket

Elev. 940.0

Vertical Upstream Face

Rad 7-0

Item # 14

ay, Gate Chamber
to be carried to
Engineer may direct

N OF SPILLWAY
1/4 in = 1 Ft.

Not less than
5'-0"

ev. 946.50

3

1/2" rods, spaced
as shown in sec. B-2

Vert. rods are $\frac{3}{4}$ "

1" ϕ rods, spaced ...
as shown in sec. B-B

Handwheel Operate

Itzti 14

$1\frac{1}{2}$ and spaced same

- 3/4" ϕ as in Section A-A

Horizontal Rods are 1"φ

Будући Будући Будући

6" Circular Base
with Flanged E
of 6" Flanged C

Elev. 923.0

GATE CHAMBER
SECTION B-B

Scale: $\frac{1}{4}$ in. = 1 Ft.

6" Flanged C.I. $\frac{1}{8}$

12" Length - 6"

1/2" 4 nops

Gate Sluice to be built
and geared for two speeds.

Handwheel Operated from Floor

Concrete Walk

Elev. 342.50

Item 14

Horizontal Rods are 1" ϕ

Spacing 8" 10" 12"

Horizontal Rods are 1/2" and spaced same as in Section A. A

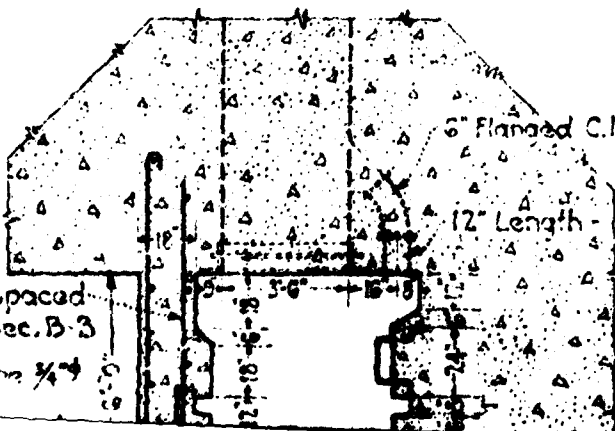
3-3/4" ϕ

42" 60" Rect Sluice Gate Bronze Mounted with side wedges but without bottom wedges

6" Circular Bronze Mounted Sluice Gate, with Flanged End bolted to 12" length of 6" Flanged C.I. Pipe

Elev. 923.0

GATE CHAMBER
SECTION B-B
Scale: 1/4" = 1 Ft.



1/2" ϕ rods, spaced as shown in sec. B-B
Vert. rods are 3/4" ϕ

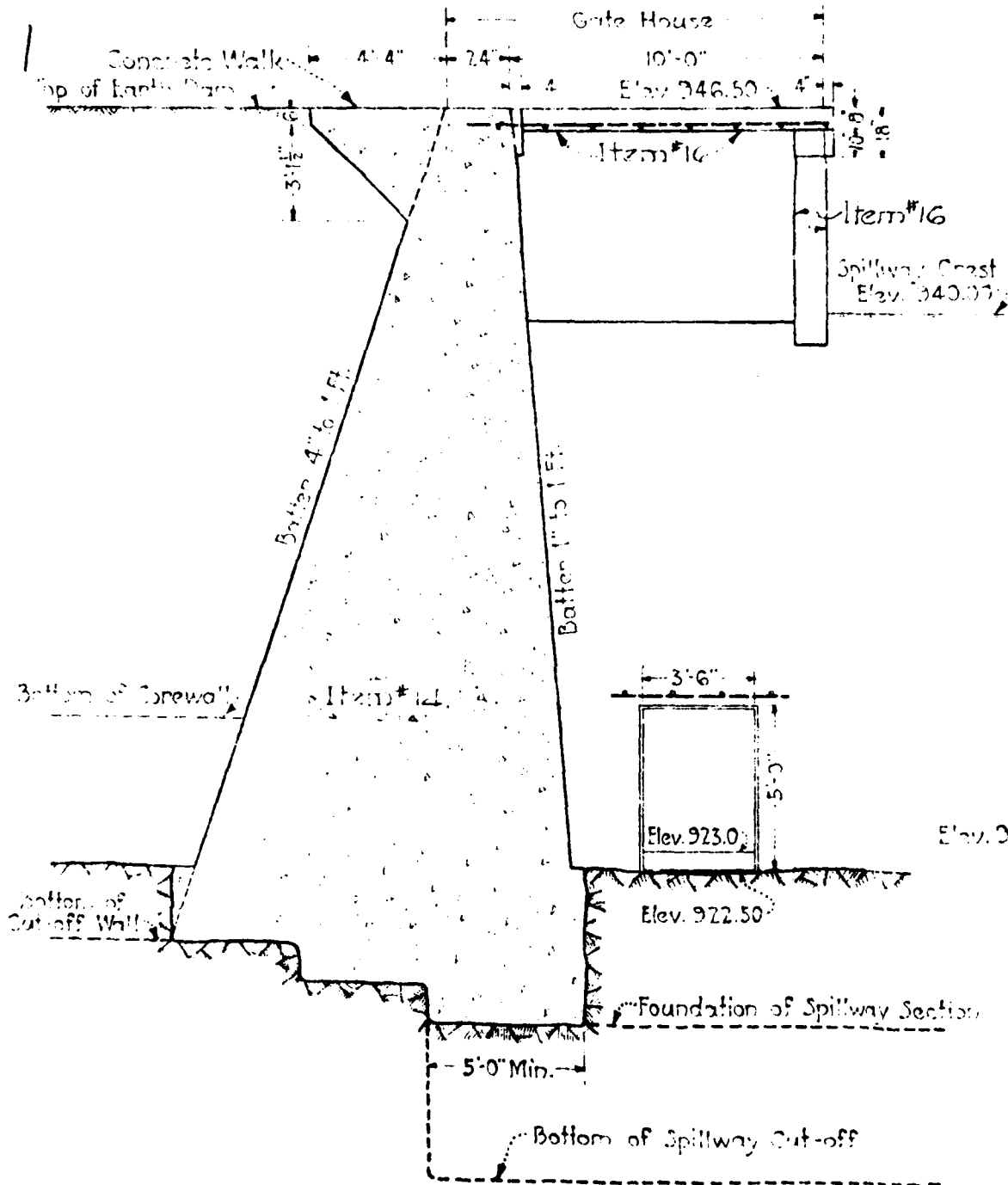
6" Flanged C.I. 1/2 Bend

12" Length - 6" Flanged C.I. Pipe

4

PLAN OF GATE CHAMBER AND SLUICeway

Scale: $\frac{1}{4}$ in. = 1 Ft.



DOWNSTREAM ELEVATION OF GATE CHAMBER AND SLUICeway

Scale: $\frac{1}{4}$ in. = 1 Ft.

RECEIVED
JAN 18 1961
G.E.

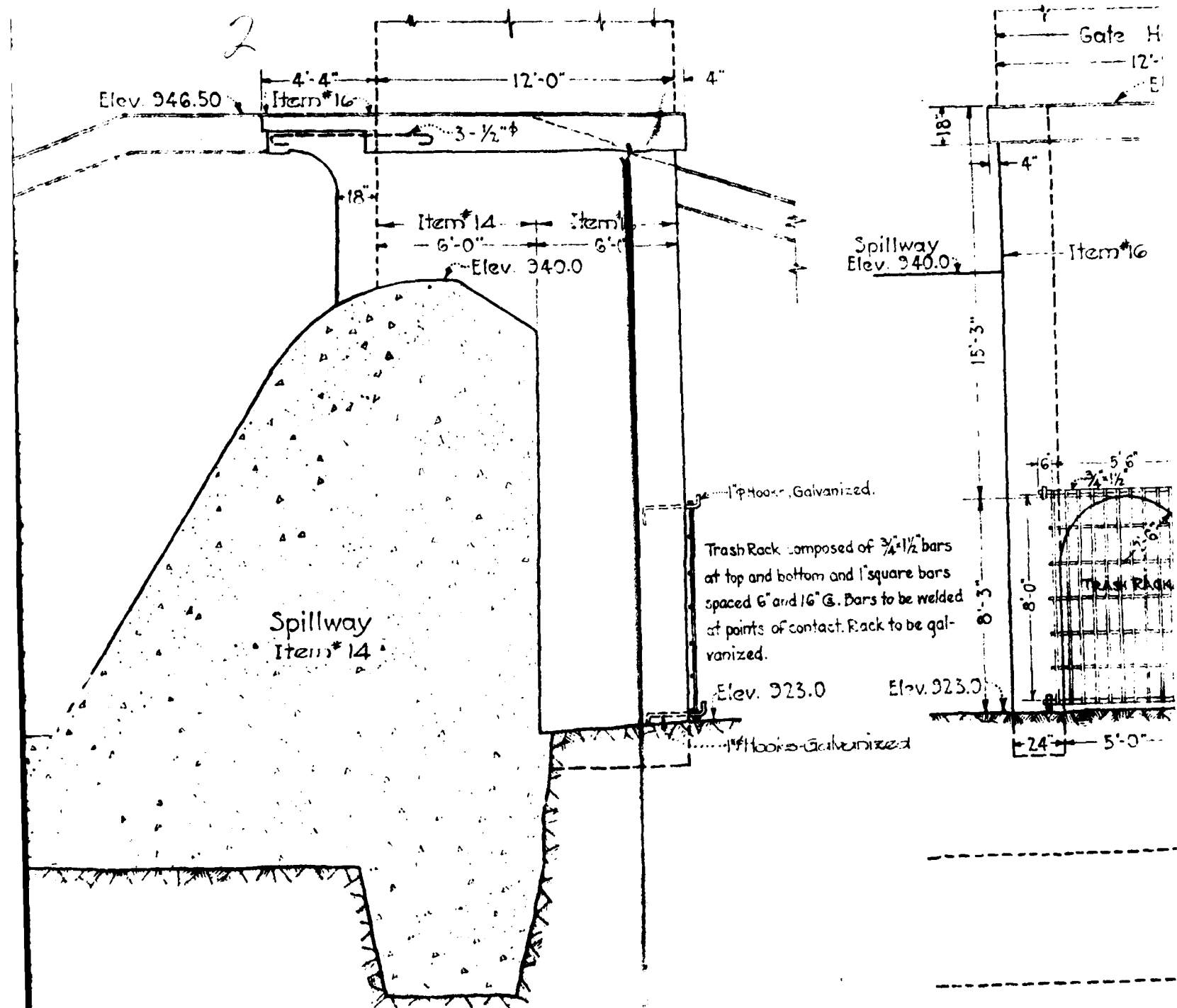
GATE CHAMBER AND SLUICeway

SECTION A-A

Scale: $\frac{1}{4}$ in. = 1 ft.

TYPICAL SECTION

Scale



SIDE ELEVATION OF GATE CHAMBER
SECTION D-D

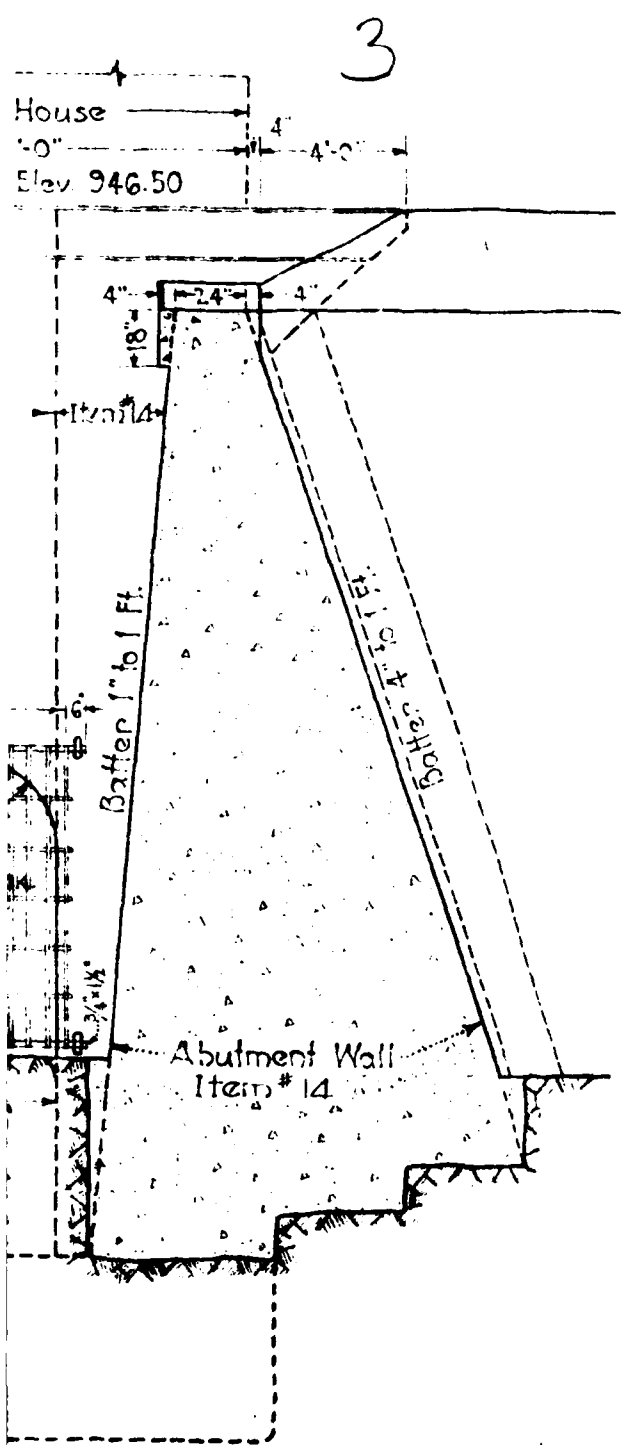
6 Scale: $\frac{1}{4}$ in. = 1 ft.

SECTION
SHOWING UPSTREAM EL
AND TYPICAL SECTION

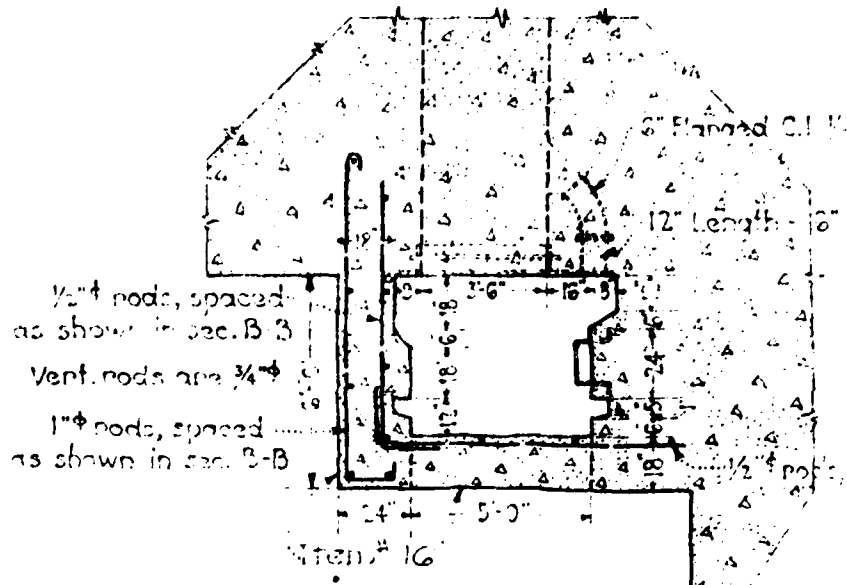
Scale

ION OF SPILLWAY
 1/4 in. = 1 Ft.

Not less than
 5'-0"



SECTION E-E
 ELEVATION OF GATE CHAMBER
 SECTION OF ABUTMENT WALLS
 1/4 in. = 1 Ft.



GATE CHAMBER
 SECTION F-F
 Scale: 1/4 in. = 1 Ft.

CITY OF ALBANY, NEW YORK BOARD OF WATER SUPPLY

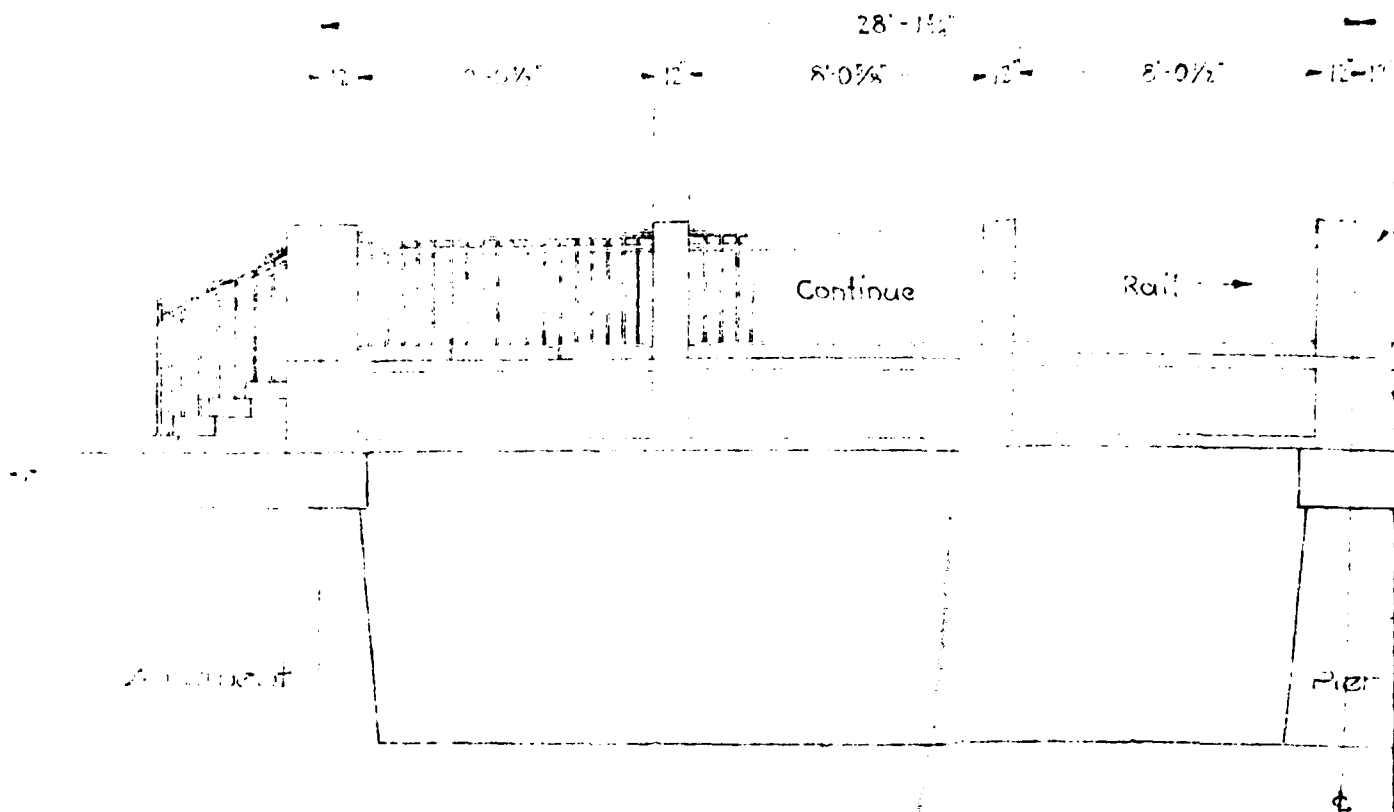
SECTION NO. 1
 CONTRACT NO. 1

BASIC CREEK DAM SPILLWAY AND GATE CHAMBER DETAILS

WHITMAN, REQUARDT AND SMITH,
 Engineers
 Scale 1/4" = 1'-0"

ROBERT
 February

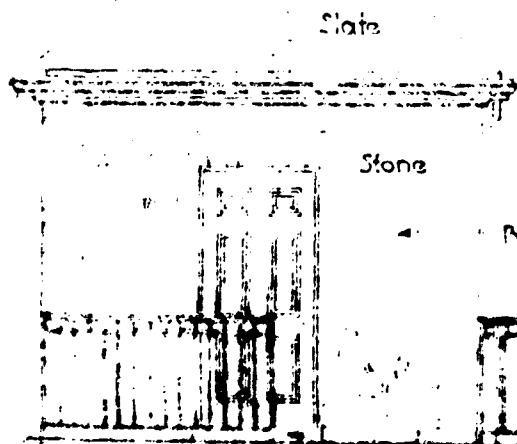
Sheet No. 3.



ELEVATION OF

Scale: 1/2"

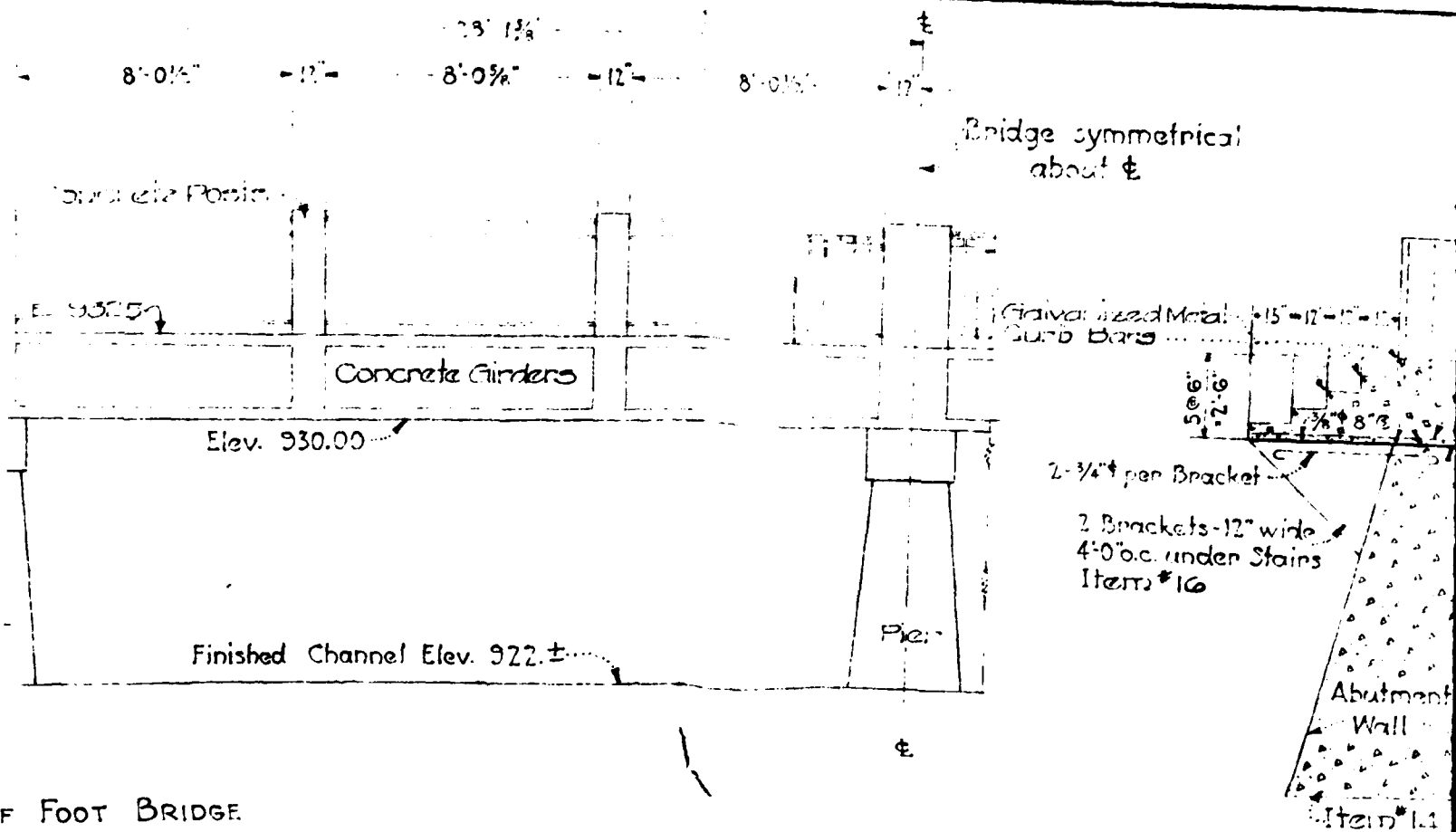
Note: Rail same as



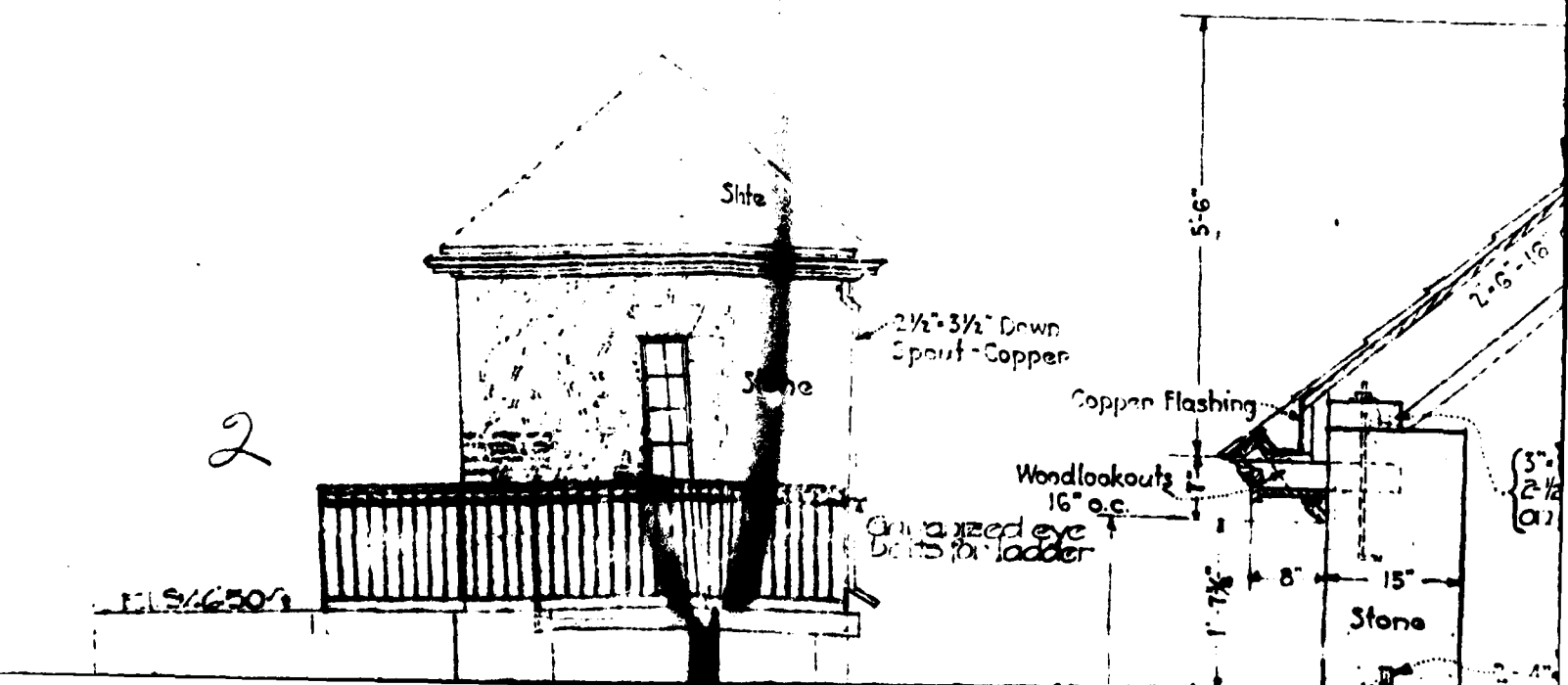
Note:

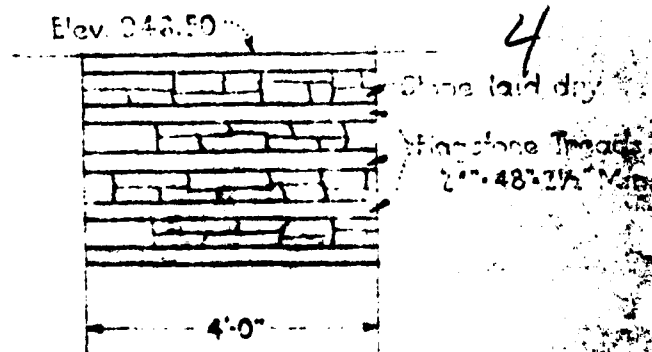
Gutters on only two sides of Bldg as shown on Elevations.

1919.650



6 FOOT BRIDGE
 1/4"=1'-0"
 as detailed below





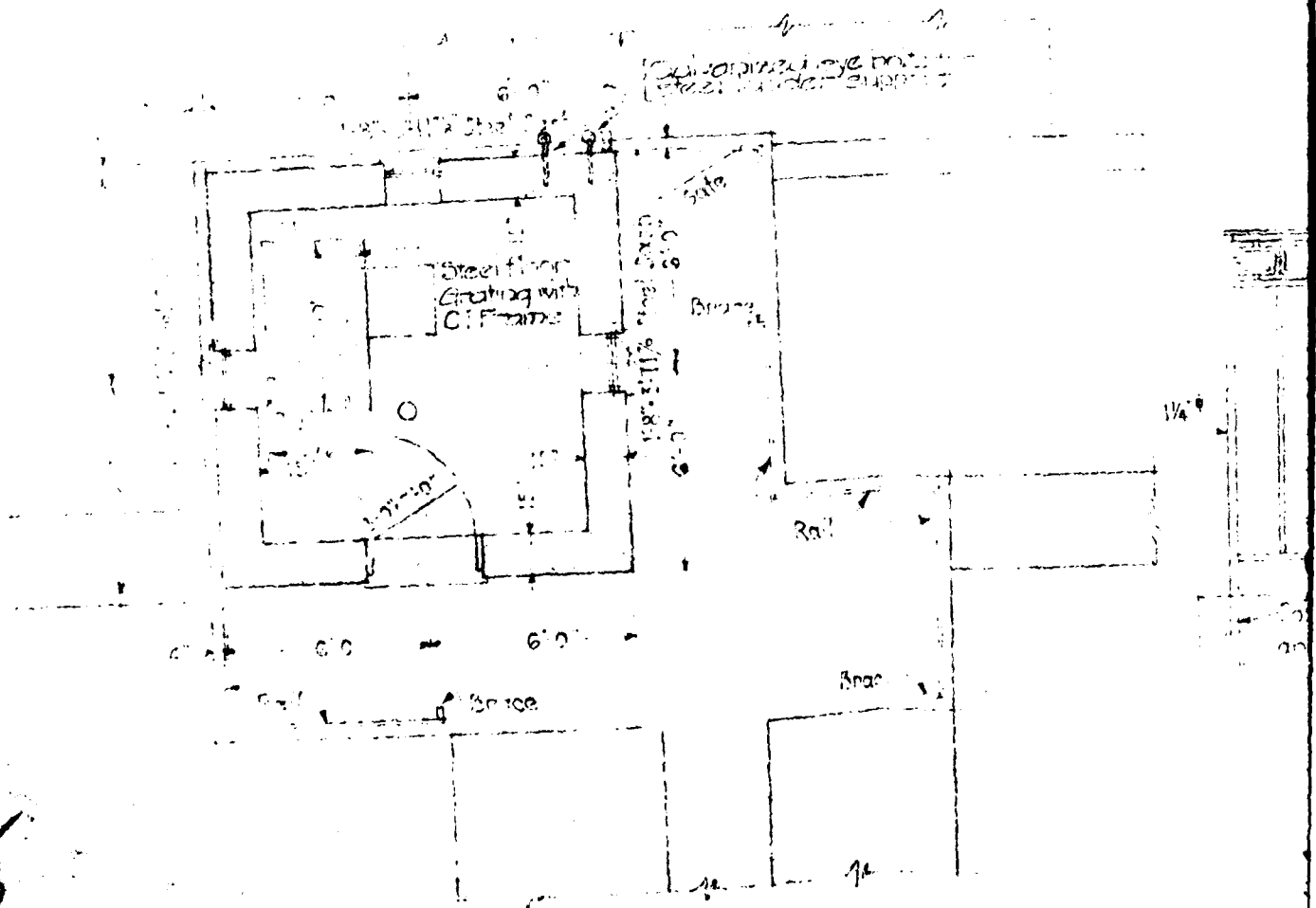
100-443886-1

Non
 children or young people of Black
 and Asian origin living in the area.

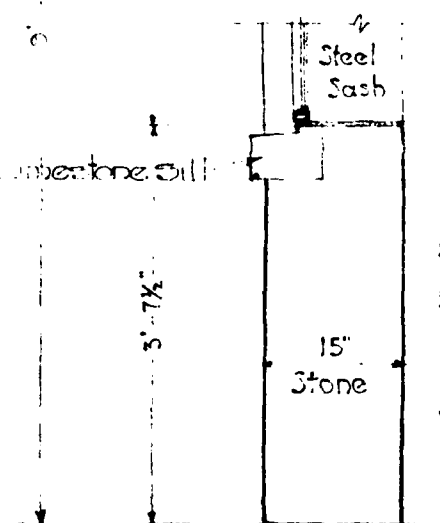
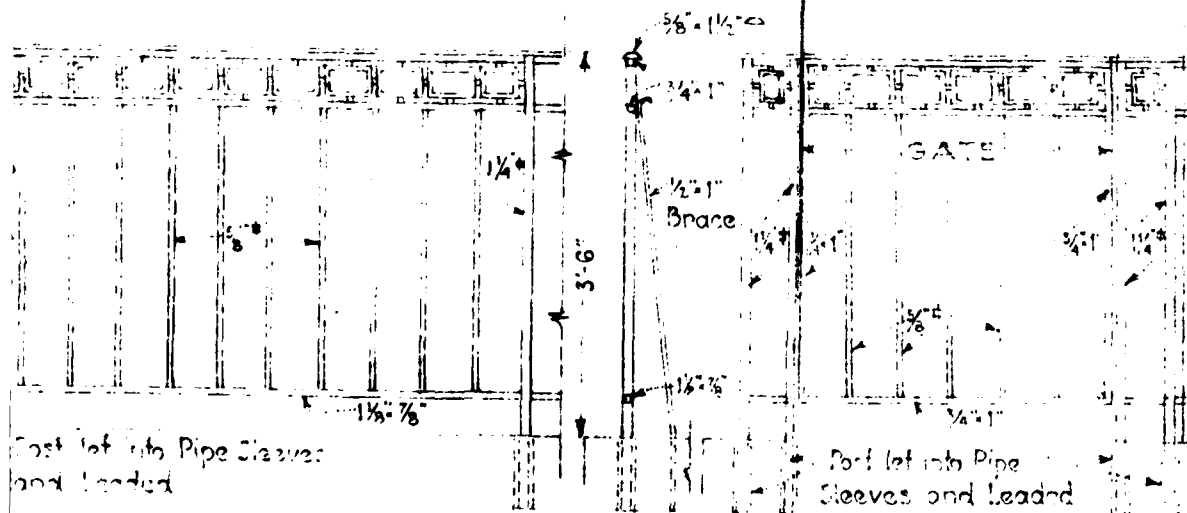
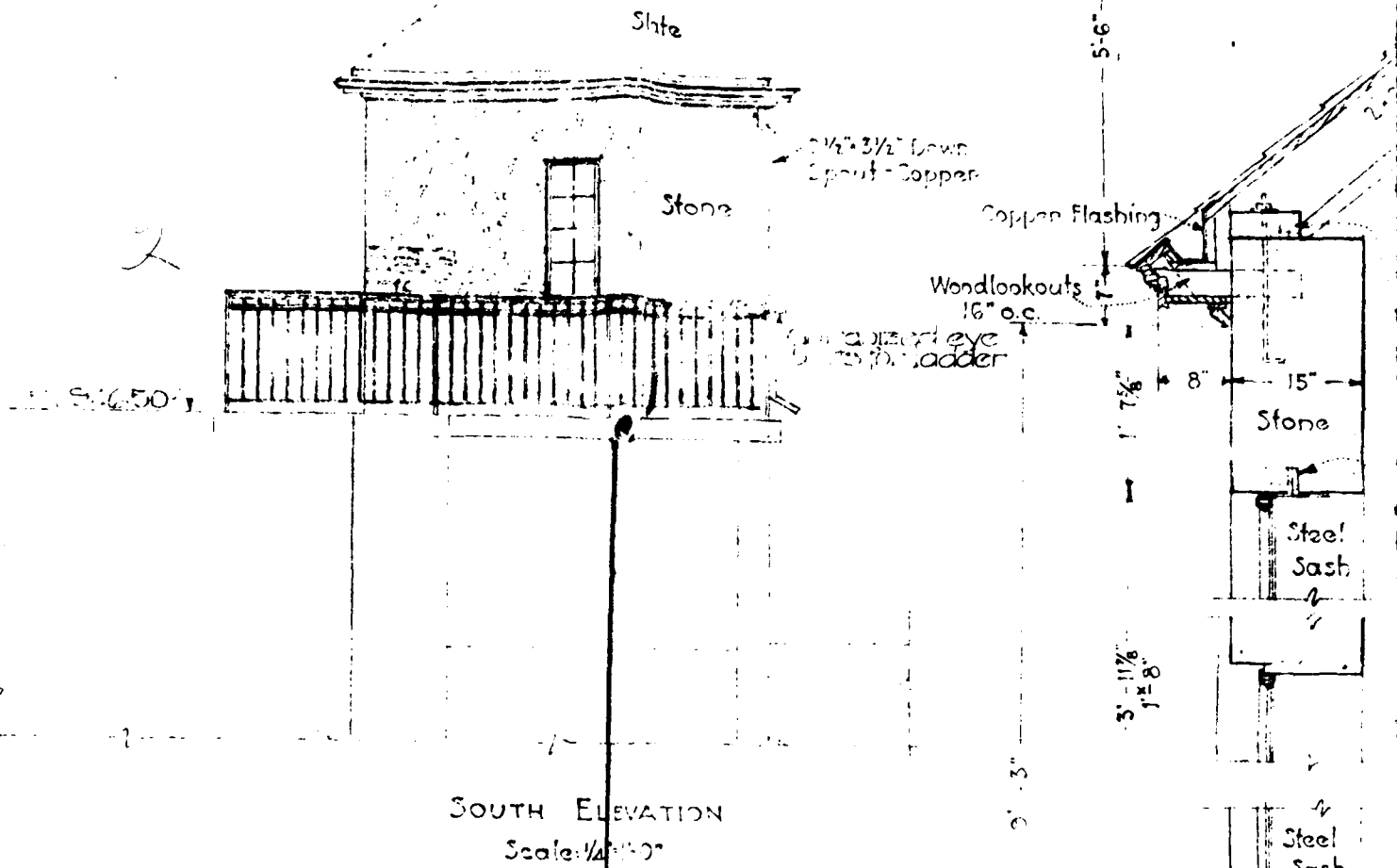
Bronze Tablet

1-19-50

Scale: 1/2"=1'-0"

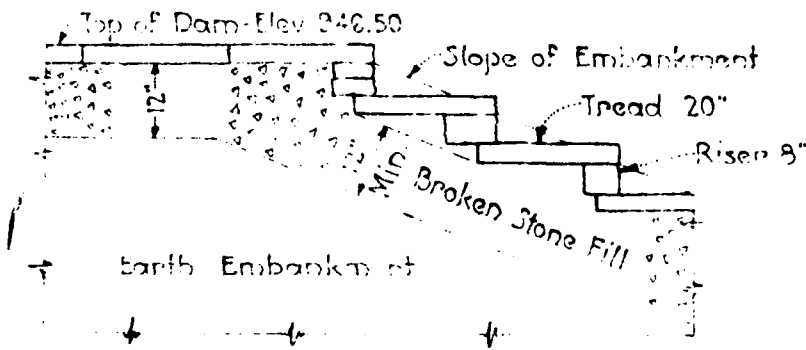


Sent 12-1-77

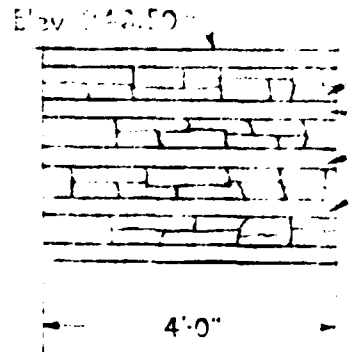


SECTIONAL
Scale: 3/4

PLAN OF APPROACH TO FOOT BRIDGE
Scale: 1/4" = 1'-0"



TYPICAL SECTION OF FLAGSTONE STEPS
Scale: 1/2" = 1'-0"



ELEVATION OF FLAGSTONE STEPS
Scale: 1/2" = 1'-0"

CITY OF ALBANY, NEW YORK
BOARD OF WATER SUPPLY

SECTION NO. 1
CONTRACT NO. 1

BASIC CREEK DAM
GATE HOUSE AND FOOT BRIDGE
DETAILS

WILLIAM BEQUARDT AND SMITH
Engineers

As shown on drawings

EDWARD F. HORTON
Contracting Engineer
February 25, 1917

Sheet No. 6

DACH TO FOOT BRIDGE
1/2" = 1'-0"

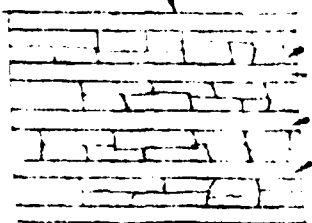
markment

pend 20"

Risen 8"

Fill

Blw 112.50



1/2" = 1'-0"

4'-0"

STEPS

ELEVATION OF FLAGGING STEPS
Scale 1/2" = 1'-0"

ALBANY, NEW YORK
OF WATER SUPPLY

SECTION NO 1
CONTRACT NO 1

BIC CREEK DAM
USE AND FOOT BRIDGE
DETAILS

AND SMITH
OWN

RUBEN E. EDINGTON
Civil Engineer
February 25, 1919

Sheet No 6

END

DATE
FILMED

11-81

DTIC